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An illustrated catalogue of the type specimens in the Greville diatom herbarium

David M. Williams

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Synopsis

An illustrated catalogue of the type specimens in Greville's herbarium, which were used to illustrate his published works, has been prepared. The catalogue has been arranged alphabetically by genus and species using Greville's original name, regardless of current nomenclatural status, to avoid confusion with current systems of classification that may differ from each other. 494 taxa are discussed. An index has been provided that gives a guide to currently accepted names. In cases where the currently accepted names may be the subject of some debate, a note to that effect is appended to the genus or species under consideration. It has not been the purpose of this catalogue to rectify any taxonomic inaccuracies, but to typify Greville's names allowing specialists to make any necessary taxonomic revisions. In some cases it has been necessary to introduce nomenclatural changes where clear instances of priority have been established.

The following nomenclatural changes have been included in an appendix: *Azpeitia obscurum* (Grev.) P. A. Sims comb. nov. (*Tricertium obscurum* Grev.), *Odontella hastata* (Grev.) J. Fenner ex D. M. Williams comb. nov. (*Hemiaulus hastatus* Grev.), *Perissonoë parvula* (Grev.) D. M. Williams comb. nov. (*Amphitetras parvula* Grev.), and *Pseudauliscus grevillei* R. Ross nom. nov. (*Auliscus nebulosus* Grev.).

Introduction

The Greville diatom herbarium consists of 5248 glass microscope slides and a number of herbarium sheets with packets containing material dried on to mica. The earlier numbers in the slide collection are made from material Greville received from other phycologists; it contains a considerable amount of type material published during the early period of diatom taxonomy. However, the later numbers of Greville's slides are of greater interest as there are very few duplicates in other herbaria. The herbarium sheet material contains the specimens referred to in Greville's first diatom publications.

This catalogue has been prepared from the material Greville used to illustrate his own diatom publications (see bibliography), the most significant of which were twenty papers dealing with various Recent and fossil localities. Of special importance are the first accounts of diatoms in a Late Eocene/Oligocene deposit from Barbados, using material received from Christopher Johnson (Greville, 1861–1866, collected together in Simonsen, 1968). Greville's publications

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are amongst the earliest for fossil diatom studies, and are of major nomenclatural importance as they contain descriptions of many species and genera.

The catalogue has been arranged alphabetically by genus and species using Greville's original name, regardless of current nomenclatural status. This is to avoid confusion with current systems of classification that may differ from each other. Altogether 494 taxa are dealt with. An index has been provided that gives a guide to currently accepted names. In cases where these may be the subject of some debate, a note to that effect is appended to the genus or species under consideration. It has not been the purpose of this catalogue to rectify any taxonomic inaccuracies, but to typify Greville's names, allowing specialists to make the necessary taxonomic revisions. In some cases it has been necessary to introduce nomenclatural changes where clear instances of priority have been established. Additionally, some taxa have been revised by Mr R. Ross but never published.

Most of the specimens Greville described as new have remained in his herbarium. However, there are exceptions where Greville was either loaned slides or used examples from other collectors. As a consequence a number of holotype specimens are lodged within other collections. Fortunately, most of these types have since been donated to the BM.

Methods

Specimen citation

Each taxon has been given its bibliographic citation, indicating the original publication. In a few cases, when a drawing was published later than the description, both references are given. When a number of Greville's papers were simultaneously published in two journals, reference has been given to both. Greville did not publish all the taxa he considered new to science and later workers used his specimens and names. These taxa appear in Rattray (1888*a*, *b*, 1890) and Ralfs (in Pritchard, 1861). As these form part of Greville's collection, they are included in this catalogue.

The locality data has been transcribed exactly as it appears on the slide label. In cases of obvious confusion, or where additional information is needed to clarify the meaning, this has been supplied enclosed in square brackets. In most cases the data on the slide label reflects the idiosyncrasies of abbreviation or spelling.

Typification

The majority of the glass slides are of strewn material mounted in Canada Balsam. A few selected mounts Greville received from other collectors and mounters are also present. The first 3000 slides, including those received from other workers, have been fully labelled with the noteworthy species, whilst the remaining 2000 slides are considered as additional material. However, in several instances Greville finally chose specimens from these later slides for his published illustration.

Greville located his specimens either by using a Maltwood Finder (abbreviated as MF in this work) or by circling the coverglass with a diamond marker around the particular specimen. The MF is based on a grid mounted on to a glass slide which has two sets of numbers, correlating to the lateral and vertical movement of the microscope stage. This is not a common method of specimen location today and few Maltwood Finder's remain in existence.

In addition to the slides, there is a large quantity of manuscript material, including notes, some copies of submitted manuscripts, and most of the original drawings, preserved in the BM. The drawings are exceptionally important when deciding on the type status of each specimen. Greville included on the pencil drawing the slide number and the MF co-ordinates for the specimen he had under consideration. In most cases, this allows the exact specimen to be re-located under the microscope. These specimens are referred to as holotypes. In cases where there is either no drawing or the drawing has either ambiguous or no slide annotations, then all possible specimens indicated by Greville are referred to as syntypes. Where it has not been possible to establish the holotype with certainty, a lectotype has been designated.

The terminology of botanical nomenclature was taken from McVaugh, Ross & Stafleu (1968). Their definitions of types were adopted. In addition, the term protologue has been used to mean 'everything associated with a name at its first publication' (McVaugh, Ross & Stafleu, 1968: 22).

Light microscopy

A Zeiss microscope, equipped with Leitz objectives and Zeiss eye-pieces, was used throughout this work. The photographs were taken using an Olympus OM-2 loaded with Ilford FP4, ASA 135 film. All specimens were photographed under oil immersion and phase contrast using the × 100 objective. If the condition of the slide prevented the use of high magnification, a × 40 dry, phase contrast objective was used.

Data collection, management, and storage

As information was drawn from several sources, a computer system was used to collate the data. This resulted in a database containing information from the slide labels, the various manuscript notes and drawings, and from the published literature. Production of this catalogue has utilized only a part of the information now stored. The full database is in active use for further projects.

Initially a DMS microcomputer was used but the largest part of the project was completed on Torchnet equipment. The system uses CP/M operating system with the DMS (Data Management System) software.

Greville types

I. *ACHNANTHES* Bory

1. **A. angustata** Grev. in *Q. Jl microsc. Sci.* **7**: 163, fig. 9 (1859). (Pl. 1, Fig. 1; specimen length 130 μm)
Patos guano *J. T. Norman* 8.1858, BM 1754, holotype.
There is no drawing of this species in Greville's manuscript collection. However, this is the only slide Greville indicates for this species. The specimen is ringed and shows two frustules that compare favourably with the published illustration. It is reasonable to assume that this is the holotype specimen.

2. **A. carmichaelii** Grev. in Hook., *Engl. Fl.*: 404 (1833). (Pl. 1, Figs 2–4; specimen length 75 μm; specimen width 3 μm in Fig. 3; width 7 μm in Fig. 4)
Parasitic on smaller filiforme algae [Appin, Scotland], *Captain Carmichael*, BM 81228, BM 81229, BM 81230.
This material forms part of the collection that is on permanent loan to the BM from Kew. Two slides are mounted in Mikrops 163 and the third is in Naphrax. As the material is from dried specimens it is difficult to find complete, undamaged valve views. These specimens are syntypes. The micrographs are taken from BM 81228.

3. **A. costata** Grev. in *Trans. bot. Soc. Edinb.* **8**: 438, figs 8–10 (1866). (Pl. 1, Figs 8–10; specimen length 37·5 μm in Fig. 8; 50 μm in Fig. 9; 52 μm in Fig. 10)
Sandwich Islds, BM 3550, lectotype, BM 3546, BM 3551; Sandwich Islds *Prof. H. Smith*, BM 3552; Sandwich Isles, BM 3930; Sandwich Islands, BM 3931.
There are no manuscript notes or drawings for this species but the protologue indicates that it is present in the same gathering as *A. pennaeformis* Grev. All slides from the type locality were examined and, as BM 3550 contained three specimens corresponding to the raphe valve, the raphe-less valve, and the girdle view of the original published figures, it was chosen as lectotype.

The name is a later homonym of *A. costata* Johnston 1860 and therefore illegitimate.

4. **A. gregoriana** Grev. in *Q. Jl microsc. Sci.* **7**: 84, figs 13, 14 (1859). (Pl. 1, Figs 11–12; specimen length 175 μm)
Arran 57, BM 2231, lectotype; Arran 1856, BM 3291; Arran 1857, BM 3487; Arran 57, BM 5149.

There are four slides in the collection with specimens of *A. gregoriana* marked by Greville, but there is no manuscript evidence to indicate which of these sides was used for his type illustrations. The most representative, BM 2231, specimen no. 2, has been chosen as the lectotype. There are two specimens on BM 3487, two specimens on BM 3291, and a single specimen on BM 5149.

5. **A. pennaeformis** Grev. in *Trans. bot. Soc. Edinb.* **8**: 438, figs 11–13 (1866). (Pl. 1, Figs 5–7; specimen length 140 μm in Fig. 5; 140 μm in Fig. 6; 137·5 μm in Fig. 7)
Sandwich Islds, BM 3546, BM 3550, BM 3551; Sandwich Islds *Prof. H. Smith*, BM 3552; Sandwich Isles, BM 3930; Sandwich Islands, BM 3931, syntypes.
There is no drawing in the Greville manuscript collection but there are a series of manuscript notes dealing with this species. On the card cover to these notes, Greville indicates the specimens that he consulted. These were BM 3546 (MF 26/21; not illustrated), BM 3550 (MF 34/28, 21/27, and 36/26), and he also erroneously refers to BM 3552 (MF 31/32). All these have been matched to the drawings but it is difficult to establish exact correspondence with certainty. As Greville included three specimens in his protologue, they are all considered syntypes.

II. *ACTINODISCUS* Grev.

1. **A. barbadensis** Grev. in *Trans. microsc. Soc. Lond.* **11**: 69, fig. 11 (1863). (Pl. 2, Fig. 1; specimen diameter 85 μm)
Barbadoes *Johnson* 1862, BM 2829, holotype.

III. *ACTINOPTYCHUS* Ehrenb.

1. **A. minutus** Grev. in *Trans. microsc. Soc. Lond.* **14**: 5, fig. 12 (1866).
'Monterey deposit; cabinet of L. Hardman, Esq.; very rare'. (Slide not found).
Although there is a drawing of this species (annotated with 'H. 53') in the Greville manuscript collection, the holotype slide has not been located. It is a Hardman slide, suggested by the 'H' part of the annotation.

IV. *AMPHIPRORA* Kütz., non Ehrenb.

At present there is some controversy concerning the correct nomenclature of this genus (Paddock & Sims, 1980: 181; see also Ross in Hartley, 1986: 596). Several of Greville's species have been re-examined and placed in new genera (Paddock & Sims, 1980; Paddock, in prep.). A revision of the genus, including the Greville species, is in progress (Paddock & Sims, in prep.).

1. **A. brebissoniana** Grev. in *Edinb. New phil. J.* **18**: 185, fig. 8 (1863); in *Trans. bot. Soc. Edinb.* **7**: 578, fig. 8 (1863). (Pl. 2, Figs 2, 4, 5; specimen length 62·5 μm)
Curteis Straits Queensland *Dr Roberts* 1862, BM 2601, holotype.
There is a drawing of this species in the Greville manuscript collection which is annotated with the numbers BM 2601 (MF 28/16) and BM 2624. On BM 2624 there is a specimen indicated at MF 31/20, but as this is not specifically referred to on the manuscript drawing, specimen MF 28/16 on BM 2601 must be the holotype.

2. **A. chinensis** Grev. in *Ann. Mag. nat. Hist.* III, **16**: 7, fig. 13 (1865). (Pl. 2, Fig. 6; specimen length 113 μm)
Hong Kong 16, BM 4495; Hong Kong, BM 4501, syntype.
The drawing in the Greville manuscript collection, is annotated with 'no. 16'. This is part of a series of working slides from the Hong Kong material. The only specimens of this taxon to be discovered in Greville's slide collection are on slide BM 4501. The micrograph is from specimen MF 25/24.

3. **A? clepsydra** Grev. in *Edinb. New phil. J.* **18**: 41, fig. 20 (1863); in *Trans. bot. Soc. Edinb.* **7**: 541, fig. 20 (1863). (Pl. 2, Fig. 8; specimen length 70 μm)
Curteis Straits, BM 2612, holotype.

4. **A. conspicua** Grev. in *Trans. microsc. Soc. Lond.* **9**: 86, fig. 16 (1861). (Pl. 3, Figs 1, 2; specimen length 85 μm)
Sierre Leone *Kitton*, BM 1890, lectotype, BM 1892; Sierre Leone, BM 2235.
Although there is a drawing of this species in the Greville manuscript collection, there is no indication which slide or specimen was used for the original description. There are three relevant slides in the collection: BM 1890 (specimen no. 2), BM 1892 (one specimen at MF 30/19), and BM 2235 (two specimens at MF 29/31 and MF 21/15). BM 1890, specimen no. 2, is designated as lectotype. There is an additional drawing in the manuscript collection of an apparently unpublished figure from BM 1892 (MF 30/19).

5. **A. delicatula** Grev. in *Edinb. New phil. J.* **18**: 39, figs 15, 16 (1863); in *Trans. bot. Soc. Edinb.* **7**: 539, figs 15, 16 (1863). (Pl. 3, Figs 3–5; specimen length 57·5 μm)
Woodlark Isld. *Roberts* 1863, BM 2717, BM 2719, syntypes.
There are two illustrations given with the published description, both of which are in the Greville manuscript collection. The valve view corresponds to BM 2717 (MF 25/24; not illustrated) and the girdle view corresponds to BM 2719 (MF 16/32; illustrated). These are syntypes.

6. **A. eximia** Grev. in *Edinb. New phil. J.* **18**: 38, fig. 13 (1863); in *Trans. bot. Soc. Edinb.* **7**: 538, fig. 13 (1863). (Pl. 3, Fig. 7; specimen length 132·5 μm)
Curteis Straits Queensland *Dr Roberts* [18]63, BM 2626, holotype.

7. **A. hyalina** Grev. in *Ann. Mag. nat. Hist.* III, **16**: 6, fig. 11 (1865). (Pl. 2, Fig. 3; specimen length 45·5 μm)
Hong Kong 1864 no. 3, BM 4507, syntypes.
No specimen is indicated as present on this slide by Greville, although the drawing in the Greville manuscript collection identifies this slide as the one he used. The poor quality of the micrograph is due to the dry mounted slide and a very thick coverslip. The specimens on this slide should be considered syntypes.

8. **A. jolisiana** Grev. in *Edinb. New phil. J.* **18**: 186, fig. 11 (1863); in *Trans. bot. Soc. Edinb.* **7**: 579, fig. 11 (1863). (Pl. 2, Fig. 7; specimen length 67·5 μm)
Curteis Straits *Dr Roberts* 1862, BM 2629, holotype.
Two specimens are indicated on the slide; the drawing in the Greville manuscript collection indicates that MF 13/22 is the holotype, whilst MF 15/24 is an isotype. The micrograph presented here is of the holotype, MF 13/22.

9. **A. kuetzingiana** Grev. in *Edinb. New phil. J.* **18**: 184, fig. 6 (1863); in *Trans. bot. Soc. Edinb.* **7**: 577, fig. 6 (1863). (Pl. 4, Figs 1, 2; specimen length 110 μm)
Curteis Straits Queensland *Dr Roberts* 1862, BM 2630, holotype.

10. **A. lata** Grev. in *Edinb. New phil. J.* **18**: 38, fig. 14 (1863); in *Trans. bot. Soc. Edinb.* **7**: 539, fig. 14 (1863). (Pl. 4, Figs 3, 4; specimen length 102·5 μm)
Curteis Straits *Dr Roberts* 1863, BM 2615, holotype.

11. **A. lepida** Grev. in *Ann. Mag. nat. Hist.* III, **16**: 5, fig. 10 (1865). (Pl. 3, Figs 8, 9; specimen length 145 μm)
Hong Kong, BM 4520, holotype.
The drawing in the Greville manuscript collection gives a MF location and a slide reference number. The slide reference number is Greville's annotation referring to his working slides and is marked simply as no. 1. Slide BM 4520 is labelled '1' and, in pencil, 'Hong Kong'. The specimen located at MF 22/20 is identical to the published figure and is therefore the holotype.

12. **A. lineata** Grev. in *Edinb. New phil. J.* **18**: 40, fig. 19 (1863); in *Trans. bot. Soc. Edinb.* **7**: 540, fig. 19 (1863). (Pl. 4, Figs 5, 6; specimen length 82·5 μm)
Woodlark Isld. *Roberts*, 1863, BM 2717, holotype.
This species has been studied in detail by Paddock & Sims (1980: 169, esp. 171) and is the type of their new genus *Undatella* Paddock & P. A. Sims.

13. **A. meneghiniana** Grev. in *Edinb. New phil. J.* **18**: 184, fig. 7 (1863); in *Trans. bot. Soc. Edinb.* **7**: 577, fig. 7 (1863). (Pl. 4, Figs 7, 8; specimen length 97·5 μm)
Curteis Strait, BM 2888, holotype.
Although there is only one illustration on the Greville manuscript drawing, two slide numbers are given. BM 2601 (MF 21/21) locates only a fragment of a valve. Additionally, the annotation is followed by an exclamation mark. BM 2888 (MF 34/24) corresponds exactly with that illustrated and it is concluded that this is the holotype.

14. **A. nitida** Grev. in *Edinb. New phil. J.* **18**: 40, fig. 18 (1863); in *Trans. bot. Soc. Edinb.* **7**: 540, fig. 18 (1863). (Pl. 5, Figs 1, 2; specimen length 77·5 μm)
Curteis Straits Queensland, BM 2614, holotype.
Two specimens are indicated on the slide; from comparison of each with the published drawings, MF 20/13 is the holotype, whilst 28/23 is a paratype.

15. **A. oblonga** Grev. in *Trans. microsc. Soc. Lond.* **11**: 20, fig. 15 (1863). (Pl. 3, Fig. 6; Detail Pl. 5, Figs 3–5; specimen length 150 μm)
Harvey Bay, *Dr Roberts* 1862, BM 2671, lectotype, BM 2677; Harvey Bay, Queensland, BM 2668, BM 2676, BM 2679; Harvey Bay, Queensland, *Dr Roberts* 1862, BM 2675.
The drawing from the Greville manuscript collection is missing and, from the annotations on the slides, it is difficult to establish which specimen Greville used for his original illustration. BM 2671 (MF 24/12) has been selected as a lectotype. Other specimens are: BM 2671 (MF 20/17), BM 2668 (MF 21/29 and 16/23), BM 2675 (MF 29/27), BM 2676 (MF 25/26), BM 2677 (MF 22/18 and 33/19), and BM 2679 (MF 35/22). Interestingly, Greville states in the protologue that a girdle view was difficult to find. BM 2677 (MF 33/19) is identified by Greville and is a girdle view.

16. **A? paradoxa** Grev. in *Edinb. New phil. J.* **18**: 41, fig. 21 (1863); in *Trans. bot. Soc. Edinb.* **7**: 541, fig. 21 (1863). (Pl. 5, Fig. 7; specimen length 80 μm)
Curteis Straits Queensland, BM 2616, holotype.

17. **A? rabenhorstiana** Grev. in *Edinb. New phil. J.* **18**: 185, fig. 12 (1863); in *Trans. bot. Soc. Edinb.* **7**: 578, fig. 12 (1863). (Pl. 5, Fig. 8; specimen length 120 μm)
Curteis Straits *Dr Roberts* 1862, BM 2624, holotype.

18. **A. rectangularis** Grev. in *Edinb. New phil. J.* **18**: 185, fig. 10 (1863); in *Trans. bot. Soc. Edinb.* **7**: 578, fig. 10 (1863). (Pl. 5, Fig. 6; specimen length 72·5 μm)
Woodlark Island *Dr Roberts* 1862, BM 2715, holotype.

19. **A? superba** Grev. in *Edinb. New phil. J.* **18**: 39, fig. 17 (1863); in *Trans. bot. Soc. Edinb.* **7**: 539, fig. 17 (1863). (Pl. 6, Figs 1–3; specimen length 232·5 μm)
New Caledonia, BM 2641, holotype.

20. **A. thwaitesiana** Grev. in *Edinb. New phil. J.* **18**: 183, fig. 9 (1863); in *Trans. bot. Soc. Edinb.* **7**: 576, fig. 9 (1863). (Pl. 5, Figs 9, 10; specimen length 72·5 μm)
Curteis Straits *Dr Roberts* 1862, BM 2603, holotype.

21. **A? undulata** Grev. in *Edinb. New phil. J.* **18**: 42, fig. 22 (1863); in *Trans. bot. Soc. Edinb.* **7**: 542, fig. 22 (1863). (Not illustrated)
Curteis Straits Queensland *Dr Roberts* 1862, BM 2611, holotype.

22. **A. venusta** Grev. in *Ann. Mag. nat. Hist.* III, **16**: 6, fig. 12 (1865).
Hong Kong *J. L. Palmer*, BM 4505, holotype.
The holotype, based on data given on the drawing in the Greville manuscript collection, corresponds to a broken slide. The coverslip has detached from the glass slide and although this can be re-mounted, it is impossible to re-trace the MF numbered specimen once this has been done.

V. *AMPHITETRAS* Ehrenb.

The relationships of *Amphitetras* Ehrenb., *Amphipentas* Ehrenb., and *Triceratium* Ehrenb., within the Eupodiscaceae have been discussed by Ross & Sims (1970), but no generic limits were

defined. Simonsen (1968) implies in his index to the Greville papers that both genera belong in *Triceratium*.

1. **A. elegans** Grev. in *Trans. microsc. Soc. Lond.* **14**: 9, fig. 24 (1866). (Pl. 6, Figs 4, 8; specimen length 72·5 μm)
Monterey *L. H.* no. 31, BM 10007, holotype.

2. **A. minuta** Grev. in *Trans. microsc. Soc. Lond.* **9**: 77, fig. 11 (1861). (Pl. 6, Fig. 5; specimen length 40 μm)
Nottingham deposit U.S., BM 2187, holotype.

3. **A. nobilis** Grev. in *Trans. microsc. Soc. Lond.* **13**: 105, fig. 27 (1865).
Red Sea *L. H.* no. 34, BM 10009.
This slide has suffered considerable damage where the coverslip has detached from the glass slide. An attempt to re-mount the coverslip has not been successful.

4. **A. parvula** Grev. in *Edinb. New phil. J.* **18**: 37, fig. 12 (1863); in *Trans. bot. Soc. Edinb.* **7**: 537, fig. 12 (1863). (Pl. 6, Figs 6, 7; specimen diameter 22·5 μm)
New Caledonia *Dr Roberts* 1863, BM 2664, holotype.
This is a specimen of *Perissonoë cruciata* (Janisch & Rabenh.) G. W. Andrews & Stoelzel (Andrews & Stoelzel, 1984). Greville mistook the air-bubble in the centre of the specimen as part the valve structure. A search on the rest of the slide revealed several good specimens of *P. cruciata*, of which one is located at England Finder 36K2 [rear].
The correct name for this species is given in the appendix.

5. **A. producta** Grev. in *Trans. microsc. Soc. Lond.* **10**: 94, fig. 11 (1862). (Pl. 6, Fig. 9; specimen diameter 52·5 μm)
Manilla shell scrapings *G. M. Browne*, BM 2382, lectotype.
There is no drawing of this species in the Greville manuscript collection. In the protologue, Greville gives two localities: 'Manilla . . . George Mansfield Browne, Esq. Dredged off St. Helena; Dr. Wallich.' Both these localities are represented in the Greville slide collection. BM 2382, from Manilla, has a few selected specimens of which one is *A. producta*. The two other slides, BM 2579 and BM 3228, do not have specimens of *A. producta* indicated on the label nor were any located on the slides. BM 2382 should therefore be considered as the lectotype.

6. **A. punctata** Grev. in *Trans. microsc. Soc. Lond.* **10**: 29, fig. 8 (1862). (Pl. 6, Fig. 10; specimen diameter 55 μm)
Ceylon *Dr Macrae*, BM 2391, holotype.

7. **A. radiata** Grev. in *Trans. microsc. Soc. Lond.* **10**: 28, fig. 7 (1862). (Pl. 7, Figs 1, 2; specimen diameter 147·5 μm)
Peru Guano *Dr Macrae*, BM 2399, holotype.

VI. *AMPHORA* Ehrenb. ex Kütz.

Many species of *Amphora* are currently being revised by Schoeman & Archibald (1986*a–c*, 1987*a*, *b*) and Schoeman, Archibald & Sims (1986). Additionally, one of Greville's species has been placed in the new genus *Undatella* Paddock & P. A. Sims.

1. **A. flexuosa** Grev. in *Edinb. New phil. J.* **18**: 183, fig. 4 (1863); in *Trans. bot. Soc. Edinb.* **7**: 576, fig. 4 (1863). (Pl. 7, Fig. 5; specimen length 77·5 μm)
Curteis Straits Queensland *Dr Roberts* [18]63, BM 2626, holotype.

2. **A. magnifica** Grev. in *Edinb. New phil. J.* **18**: 182, fig. 1 (1863); in *Trans. bot. Soc. Edinb.* **7**: 575, fig. 1 (1863). (Pl. 7, Figs 8, 9; specimen length 117·5 μm)
Curteis Straits *Dr Roberts*, 1863, BM 2713, holotype, BM 2593 (figured in Paddock & Sims (1980) as pl. 6, figs 48, 50), BM 2600, BM 2602, BM 2613, BM 2616, BM 2626, BM 2632, BM 2635, BM 2638, BM 2639, BM 2881 (figured in Paddock & Sims (1980) as pl. 6, figs 47, 49), BM 2882, BM 2885, BM 2886, BM 2888, BM 4644, BM 4659.

Greville indicated on the drawing in the Greville manuscript collection the exact slide he referred to for the illustration of this species. The slide is not annotated. There are a considerable number of specimens in the collection; all should be considered as paratypes. It is probable that Greville drew upon this large number of specimens for the description. For a recent detailed treatment of this species see Paddock & Sims (1980).

3. **A. pulchra** Grev. in *Edinb. New phil. J.* **18**: 182, fig. 2 (1863); in *Trans. bot. Soc. Edinb.* **7**: 575, fig. 2 (1863). (Pl. 7, Figs 6, 7; specimen length 107·5 μm)
Curteis Straits 1863, BM 2633, holotype; BM 2597, BM 2636, BM 2884, BM 2889, BM 4665.
The drawing in the Greville manuscript collection indicates BM 2633 (MF 24/17) as the holotype. For a recent detailed treatment of this species see Paddock & Sims (1980). They include micrographs of the holotype (pl. 2, fig. 11), along with scanning electron micrographs of some Recent material. See also *Amphiprora lineata*.

4. **A. sarniensis** Grev. in *Trans. microsc. Soc. Lond.* **10**: 95, fig. 12 (1862). (Not illustrated)
Guernsey *Dr Wallich*, BM 2530, BM 2531 lectotype, BM 2532.
There is no drawing in the Greville manuscript collection of this species and three slides are possible sources of the holotype. Schoeman & Archibald (1987*b*) have studied the genus *Amphora* extensively, including this species. They have designated as lectotype BM 2531.

5. **A. sinuata** Grev. in *Trans. bot. Soc. Edinb.* **7**: 576, fig. 5 (1863); in *Edinb. New phil. J.* **18**: 183, fig. 5 (1863). (Pl. 7, Fig. 4; specimen length 50 μm)
Curteis Straits Queensland *Dr Roberts* 1862, BM 2595, holotype.

6. **A. undulata** Grev. in *Edinb. New phil. J.* **18**: 182, fig. 3 (1863); in *Trans. bot. Soc. Edinb.* **7**: 575, fig. 3 (1863). (Pl. 7, Fig. 3; specimen length 65 μm)
Curteis Straits Queensland, BM 2616 (MF 27/36), holotype; BM 2597, BM 2631.

VII. *ARACHNOIDISCUS* Ehrenb.

1. **A. grevilleanus** Hardman ex Grev. in *Trans. microsc. Soc. Lond.* **13**: 47, fig. 7 (1865). (Not illustrated)
Cambridge Estate Barbadoes *Johnson* 1864, BM 3278; Barbadoes 1865, BM 3284; Barbadoes *Johnson*, BM 3445; Barbadoes *Johnson*, BM 3463; Springfield Estate Barbadoes *L. Hardman* 1864, BM 3343.
No indication is given on the drawing as to which slide was used for the original description. Several localities were given in the protologue, all of which are represented by slides. All specimens are obscured by debris, with most either fragmented or obscured by some other material.

VIII. *ASTERIONELLA* Hassall

1. **A. synedraeformis** Grev. in *Ann. Mag. nat. Hist.* III, **16**: 4, figs 5, 6 (1865). (Not illustrated)
Hong Kong Harbour *J. L. Palmer* 1863, BM 3229; Hong Kong Harbour *T. G. R. [ylands]*, BM 4438, syntypes.

IX. *ASTEROLAMPRA* Ehrenb.

The most recent revision of the genus by Gombos (1980) has intepreted a few species in relation to their phylogenetic position in the family Asterolampraceae. After making a detailed study of the 'rays' by SEM, Gombos drew attention to Greville's descriptive terminology. Where Greville had referred to 'umbilical lines' as the side walls of the 'rays', Simonsen (in Gombos, 1980) suggested that they be replaced with the term 'separating line', and umbilicus should be replaced by junction point. The quotes below from Greville's descriptions have been made verbatim. Nevertheless, the above modern terminology should be borne in mind.

Many of Greville's species would be placed in the 'genus' *Liostephania* Ehrenb., which is apparently preserved casts of *Asterolampra* valves. A review by Payne (1922) and a recent short

paper by Hanna & Brigger (1970) show a number of Greville's species as such casts: *A. laevis, A. aemulans, A. simulans, A. pulchra, A. kittoniana, A. stellulata, A. dubia, A. ambigua, A. aliena,* and *A. scutula.*

1. **A. aemulans** Grev. in *Trans. microsc. Soc. Lond.* **10**: 52, figs 34, 35 (1862). (Pl. 8, Figs 1, 2; specimen diameter 45 μm)
Barbadoes deposit, BM 2031, lectotype (MF 16/26), BM 2030.
There is no drawing in the Greville manuscript collection. Two slides are indicated by Greville for this species: BM 2031 and BM 2030. BM 2030 has only a fragmented valve, whilst BM 2031 has two entire valves, MF 16/26 and 34/28. The former has been photographed as the latter is partially obscured by another diatom.

2. **A. affinis** Grev. in *Trans. microsc. Soc. Lond.* **10**: 45, figs 7–9 (1862). (Pl. 8, Figs 3–6)
Barbadoes deposit, BM 2015, BM 2030, BM 2036, BM 2063, BM 2068, BM 2069.
There are no drawings in the Greville manuscript collection. In the protologue Greville refers to several valves he inspected. It is not clear which of these specimens were used for the series of illustrations. Some of the valves observed on the slides can be matched with those of Greville's descriptions: 'I have only seen one individual in which umbilical cellules were entirely absent [BM 2030 (24/25) Greville's fig. 7; Pl. 8, Fig. 5; specimen diameter 45 μm]. The valve, fig. 9, is the largest disc belonging to the genus which has occurred in the deposit [BM 2015 (30/10) (Pl. 8, Fig. 5; specimen diameter 82·5 μm)]'. Greville's figure 8 is probably BM 2015 (MF 19/25; Pl. 8, Fig. 6; specimen diameter 60·5 μm).

Additionally, the label of BM 2068 is annotated by Greville as having two specimens, but none were found corresponding to the MF numbers. The coverslip may have moved and the specimens no longer correspond to their original position.

3. **A? aliena** Grev. in *Trans. microsc. Soc. Lond.* **10**: 55, fig. 46 (1862). (Pl. 9, Fig. 1; specimen diameter 50 μm)
Barbadoes deposit, BM 2032, holotype?
There is no drawing in the Greville manuscript collection. Two slides are indexed by Greville as having specimens of *A. aliena*. BM 2604 has a note attached to the label which states: 'The *Asterolampra* is allied to *A. aliena* but differs somewhat.' Therefore, the other slide, BM 2032, is probably the holotype. Another specimen exists in the Hardman collection, BM 10051.

4. **A. ambigua** var. **a** Grev. in *Trans. microsc. Soc. Lond.* **10**: 54, figs 42–44 (1862).
Barbadoes deposit, BM 2068, holotype?
In the protologue Greville states: 'I am indebted to my friend Mr. Rylands for the use of two drawings, from which I have made the figs. 42 and 44'. Neither of these figures are extant in the Greville manuscript collection or in any of Ryland's papers so far examined. The specimen on BM 2068 could not be located.

5. **A. ambigua** var. **b** Grev. in *Trans. microsc. Soc. Lond.* **10**: 54, fig. 45 (1862). (Pl. 9, Fig. 2; specimen diameter 40 μm)
Barbadoes deposit, BM 2064 (MF 17/19), holotype?
This is the only slide in the Greville collection referable to var. *b* and is probably the holotype.

6. **A. brebissoniana** Grev. in *Trans. microsc. Soc. Lond.* **8**: 114, fig. 9 (1860).
Monterey Stone *Arnott* (647), BM 1941; Monterey Stone *Arnott* (6472), BM 1942.
Neither of these slides corresponds to specimens of the above species.

7. **A. concinna** Grev. in *Trans. microsc. Soc. Lond.* **10**: 46, figs 10–12 (1862). (Pl. 9, Figs 5, 7; specimen diameter 70 μm)
Barbadoes deposit, BM 2017, lectotype (MF 23/37), BM 2016, BM 2063.
Greville notes that 'I have only seen four specimens, all with seven rays, and destitute of umiblical cellules.' These four specimens are: BM 2016 (MF 22/21), BM 2017 (MF 23/37), and BM 2063 (MF 35/31 and MF 16/32). The micrograph (BM 2017) is from the best of these four. The other specimens are obscured by either diatoms or debris.

8. **A. crenata** Grev. in *Trans. microsc. Soc. Lond.* **10**: 47, figs 14–16 (1862). (Pl. 9, Fig. 6; specimen diameter 47·5 μm)
Barbadoes deposit, BM 2048, lectotype, BM 2022, BM 2024, BM 2033, BM 2064, BM 2066.
Several specimens are indicated in the Greville slide collection. BM 2048 has been chosen as lectotype because it presents a whole specimen.

9. **A. dallasiana** Grev. in *Trans. microsc. Soc. Lond.* **8**: 115, fig. 10 (1860).
Bermuda Tripoli, BM 1287, BM 1728; Nottingham dept. U.S., BM 2196.
No specimens could be located on the above slides.

10. **A. decora** Grev. in *Trans. microsc. Soc. Lond.* **10**: 45, figs 4–6 (1862). (Pl. 10, Figs 1–4)
Barbadoes deposit, BM 2015, BM 2021, BM 2024, BM 2031, BM 2037, BM 2038, BM 2064, BM 2065, BM 2067, BM 2068, BM 2170, BM 2073.
According to Greville, this species exhibits considerable variation in pattern. He illustrates this in his text by stating: 'I have examined a large suite of specimens, and in twenty-five, of which I have taken notes, the number [of rays] varied from five to fourteen, and that of umbilical cellules is equally uncertain.' Not all of the 25 specimens that Greville refers to have been located in his collection. However, a large number have been discovered which are usually annotated on the slide label with the number of rays that are present, i.e. BM 2015, 6 rays, BM 2021, 14 rays, BM 2024, 6 rays, BM 2031, 8 rays, BM 2038, 10 rays, BM 2067, two specimens with 10 rays and 6 rays. Finally, BM 2037 has no annotation but has 6 rays, BM 2064 has three specimens, and BM 2065 has 10 rays. BM 2068 is annotated as having no cellules.

It is possible to compare the published figures with the specimens. Greville's figure 4 is probably BM 2024, but it is difficult to be certain as the specimen lies at an angle. This may account for the overestimation of the number of central cellules in this specimen. Greville's figure 5 is BM 2015 (Pl. 10, Figs 2–4; specimen diameter 55 μm) and Greville's figure 6 is BM 2021 (Pl. 10, Fig. 1; specimen diameter 45 μm).

11. **A. decorata** Grev. in *Trans. microsc. Soc. Lond.* **10**: 46, fig. 13 (1862). (Pl. 10, Figs 5–8; specimen diameter 72·5 μm)
Barbadoes deposit, BM 2018, holotype?
In the protologue Greville states that: 'Only one valve of this exquisitely beautiful disc has been found.' As BM 2018 is the only slide with this taxon, it is probably the holotype.

12. **A. dubia** Grev. in *Trans. microsc. Soc. Lond.* **10**: 54, fig. 41 (1862).
Barbadoes deposit, BM 2037, holotype?
There is no drawing of this specimen in the Greville manuscript collection and only one slide number is given in the catalogue index. I have been unable to locate this specimen. It remains to be seen if this slide is the holotype.

13. **A. eximia** Grev. in *Trans. microsc. Soc. Lond.* **13**: 99, fig. 10 (1865). (Pl. 10, Figs 9, 10; specimen diameter 70 μm)
Barbadoes, *L.H.* no. 1139, BM 10895, holotype?
Greville indicates that he obtained his specimen from Hardman. It is possible that this slide is the holotype.

14. **A. hiltoniana** Grev. in *Trans. microsc. Soc. Lond.* **8**: 117, fig. 15 (1860). (Pl. 11, Figs 1, 2; specimen diameter 90 μm)
Ind. Oc. Soundings *Captain Pullen* 2200 fathom, BM 1927, BM 1880, BM 1882, BM 1923, BM 1925, BM 1926, BM 1937, BM 1951; Algoa Bay Guano, BM 1678, syntypes.
Greville gives two localities in the protologue for this species. However, in the text he notes 'In the Indian one, which I have figured with nineteen rays' (see his figure 15), indicating which gathering was used for the drawing. There is no specimen identified as *A. hiltoniana* on the Algoa Bay slides. Greville refers to these specimens in an earlier account (Greville, 1859*b*: 160). BM 1678 has a single specimen of an *Asterolampra* species (probably *A. marylandica* Ehrenb.). This has the simple lines that Greville referred to and may be the Algoa Bay specimen he used in the description of *A. hiltoniana*. The micrograph is from BM 1880.

Rattray (1888*a*) lists the African locality in his description of this species, which would suggest he had examined Greville's material, but there are no annotations to the Greville slides as was Rattray's usual practice.

15. **A. kittoniana** Grev. in *Trans. microsc. Soc. Lond.* **10**: 53, fig. 39 (1862). (Pl. 11, Fig. 3; specimen diameter 40 μm)
Barbadoes deposit, BM 57803, holotype; BM 2069.
Greville noted in the protologue: 'For a drawing of this elegant little species I am indebted to my very obliging correspondent, Mr. Kitton, of Norwich, who alone has discovered it.' In the Wynne Baxter collection there is a series of slides that were purchased from the executors of Kitton's estate. Among these slides, BM 57803 (*Wynne Baxter* 3181) is from Barbados. In volume 4 of the catalogue that accompanied Wynne Baxter's slide collection, there is an annotation against this slide number: 'This is the original specimen from which Greville took his description and figure.' As this slide was originally in Kitton's herbarium it is safe to assume this is the holotype (MF 37/28).

16. **A. laevis** Grev. in *Trans. microsc. Soc. Lond.* **10**: 51, fig. 33 (1862). (Pl. 11, Figs 4, 5; specimen diameter 27·5 μm)
[Barbadoes deposit], BM 2072, holotype?
There is no drawing of this specimen in the Greville manuscript collection. BM 2072 is the only slide in Greville's collection with this name on the label.

17. **A. moronensis** Grev. in *Q. Jl microsc. Sci.* II, **3**: 230, fig. 8 (1863).
Moron nr. Seville *Norman* 1862, BM 2698, holotype?
There is a drawing in the Greville collection which indicates that specimen MF 18/30 of slide BM 2698 is the one used for the illustration. On the manuscript drawing the number 33/16 appears in the top corner but it has been crossed out. Neither MF numbers locate specimens on this slide. The holotype has yet to be discovered.

18. **A. pulchra** Grev. in *Trans. microsc. Soc. Lond.* **10**: 53, figs 37, 38 (1862). (Pl. 11, Figs 6, 7; specimen diameter 57·5 μm)
Barbadoes deposit, BM 2036, lectotype, BM 2062.
Greville gave two illustrations for this species corresponding with the above two slides. BM 2036 is the specimen in figure 38; BM 2062 (MF 13/22) is the specimen in figure 37. BM 2036 has been chosen as lectotype as it is an entire valve.

19. **A. punctata** Grev. in *Trans. microsc. Soc. Lond.* **10**: 51, fig. 32 (1862). (Pl. 11, Figs 8, 9; specimen diameter 70 μm)
Barbadoes deposit, BM 2252, holotype?; [Barbadoes deposit], BM 2064; Barbadoes deposit, BM 2072, BM 2086.
All the annotated slides in Greville's collection have specimens with only six rays. BM 2252 has seven rays, as does the published illustration. This probably indicates that it is the holotype.

20. **A. ralfsiana** Grev. in *Trans. microsc. Soc. Lond.* **10**: 50, fig. 31 (1862). (Pl. 12, Fig. 1; specimen diameter 65 μm)
Barbadoes deposit, BM 2039, lectotype, BM 2015, BM 2063, BM 2065, BM 2070, BM 2072, BM 2075, BM 2079, BM 2109, BM 2200.
All the slides from the type locality are of rather poor quality. BM 2039 was chosen as lectotype as it is the closest to that represented in the published figure.

21. **A. roperiana** Grev. in *Trans. microsc. Soc. Lond.* **8**: 120, fig. 14 (1860). (Pl. 12, Fig. 2; specimen diameter 85 μm)
Ind. Oc. Soundings *Captain Pullen* 2200 fathom, BM 1924 lectotype, BM 1874, BM 1882, BM 1930, BM 1931, BM 1933, BM 1934, BM 1951, BM 4417.
Greville states in the protologue that he made 'examination[s] of above a dozen specimens' and 'the individual figured is the most perfect but by no means the largest in my cabinet.' The only specimen that appears to be complete is that on BM 1924 (MF 30/17) and hence is chosen as the lectotype. BM 1930 is annotated 'large fragment' and BM 1933 is annotated '.0066'.

22. **A. rotula** Grev. in *Trans. microsc. Soc. Lond.* **8**: 111, fig. 5 (1860).
Monterey Stone *Arnott* (647), BM 1941; Monterey Stone *Arnott* (6472), BM 1942, BM 1967.
Greville made a number of drawings of this species but there is no indication which slide was used for the published illustration. BM 1941 has been chosen as lectotype.

23. **A. rylandsiana** Grev. in *Trans. microsc. Soc. Lond.* **10**: 49, figs 28, 29 (1862). (Pl. 12, Fig. 3; specimen diameter 40 μm)
Barbadoes deposit, BM 2021, BM 2023, BM 2025, BM 2063, BM 2064, BM 2065, BM 2068.
The two figures Greville published may correspond to the following slides: figure 28 possibly to BM 2021 (Pl. 12, Fig. 3) and figure 29 possibly to BM 2068 (not illustrated).

24. **A. scutula** Grev. in *Trans. microsc. Soc. Lond.* **10**: 52, fig. 47 (1862). (Pl. 12, Fig. 4; specimen diameter 35 μm)
Barbadoes deposit *Johnson* 1861, BM 2473, holotype.
This is the only slide of this species in the Greville collection and is probably the holotype. The slide is rather thick, allowing only low magnification and rather poor focus.

25. **A. shadboltiana** Grev. in *Trans. microsc. Soc. Lond.* **8**: 121, fig. 19 (1860). (Pl. 12, Fig. 5; specimen diameter 62·5 μm)
Ind. Oc. Soundings *Captain Pullen* 2200 fathom, BM 1935 lectotype, BM 1936.
In the protologue Greville states: 'Mr. Roper very kindly sent both his accurate drawing and the slide containing the valve of this interesting species for my inspection.' It is not clear from the slides which, if any, came from Roper. As Greville states that the specimens he discovered from his own collection were identical to that of Roper's, BM 1935 has been chosen as lectotype. BM 1936 has the label annotated with *A. shadboltiana*. However, the name is followed by a query and suggests doubt in Greville's mind. There are a number of slides in the Roper collection (BM) of this species (BM 21659, BM 21671, BM 21667).

26. **A. simulans** Grev. in *Trans. microsc. Soc. Lond.* **10**: 52, fig. 36 (1862). (Pl. 12, Fig. 6; specimen diameter 57·5 μm)
Barbadoes deposit, BM 2021, holotype?
There is no drawing of this specimen in the Greville manuscript collection. The above slide is the only one in Greville's collection annotated for this species.

27. **A. stellata** Grev. in *Trans. microsc. Soc. Lond.* **8**: 124, fig. 20 (1860). (Not illustrated)
Indian Ocean soundings, BM 1938, BM 1939, BM 1951, syntypes.
Greville only suggested a provisional name for this taxon. However, it has been accepted by many subsequent authors.

28. **A. stellulata** Grev. in *Trans. microsc. Soc. Lond.* **10**: 54, fig. 40 (1862). (Pl. 12, Fig. 7; specimen diameter 32·5 μm)
Barbadoes deposit, BM 2016, holotype?, BM 2032.
Greville states in the protologue that he has 'only seen two examples [of this species] one of which has seven, the other nine rays.' On each of the slides above there is one specimen; both should be considered syntypes. However, the illustration is of a seven-rayed specimen which is present on BM 2016 and this should probably be considered the holotype.

29. **A. variabilis** Grev. in *Trans. microsc. Soc. Lond.* **8**: 111, figs 6–8 (1860). (Pl. 9, Figs 3, 4; Pl. 12, Figs 8–12; Pl. 13, Figs 1, 2; specimen diameter 45–60 μm)
Monterey *Walker-Arnott*, BM 1941, BM 1942, BM 1971, BM 2008, BM 2012, BM 2250, BM 2253, BM 2255.
In the protologue Greville gives an extended discussion of the variability of this species, giving six types of variation pattern. Of these, three are illustrated and the type of variation in pattern stated:
(1) Seven rays, one line is simple, six united in triplets, only three radiate from the central point.
(2) Eight rays.

(3) Eight rays, one simple line, two forked, one triplet, four lines radiating from the centre, but by a different combination of rays.
(4) Nine rays, two simple lines, two forked and one triplet (Greville's fig. 7).
(5) Ten rays, no single line but two forked and two triplets.
(6) Eleven rays, one simple line, two triplets and one quadruplet (Greville's fig. 8).

As this species involves such a diverse series of forms, it was decided not to propose a lectotype until the series has been studied thoroughly.

30. **A. vulgaris** var. **a** Grev. in *Trans. microsc. Soc. Lond.* **10**: 47, figs 17–20 (1862). (Pl. 13, Figs 3–9; specimen diameter 55–137 μm)
Barbadoes deposit, BM 2017, BM 2018, BM 2020, BM 2023, BM 2024, BM 2035, BM 2045?, BM 2049, BM 2063, BM 2064.
Greville illustrated this taxon with a wide range of variation.

31. **A. vulgaris** var. **b** Grev. in *Trans. microsc. Soc. Lond.* **10**: 47, fig. 21 (1862). (Pl. 13, Fig. 10; specimen diameter 52·5 μm)
Barbadoes deposit, BM 2022, holotype.

32. **A. vulgaris** var. **c** Grev. in *Trans. microsc. Soc. Lond.* **10**: 47, fig. 22 (1862).
Barbadoes deposit, BM 2020.
This is the only slide annotated for this variety and is probably the holotype. Unfortunately no specimen could be located.

33. **A. vulgaris** var. **d** Grev. in *Trans. microsc. Soc. Lond.* **10**: 47, figs 23, 24 (1862). (Pl. 13, Figs 11, 12; specimen diameter 57·5 μm)
Barbadoes deposit, BM 2015, lectotype; [Barbadoes], BM 2026, BM 2030, BM 2035, BM 2063, BM 2070.

34. **A. vulgaris** var. **e** Grev. in *Trans. microsc. Soc. Lond.* **10**: 47, fig. 25 (1862). (= *A. splendida* Grev. ex Rattray in *Trans. R. microsc. Soc.* **1890**: 648 (1890).) (Pl. 14, Fig. 6; specimen diameter 40 μm)
Barbadoes deposit, BM 2094, holotype.
Greville originally listed this species as *A. vulgaris* var. *e*, with a note in the text saying 'the most extreme variety is one which I first considered distinct, and named *A. splendida* (fig. 25) and even now I am not quite satisfied about its true position.'

35. **A. wallichiana** Grev. in *Trans. microsc. Soc. Lond.* **8**: 115, fig. 11 (1860). (Pl. 14, Fig. 5; specimen diameter 77·5 μm)
Bermuda Tripoli *Bailey* 1856, BM 1330.
The protologue has E. W. Dallas as collector, but the slide indicates J. W. Bailey. There is no drawing in the Greville manuscript collection and hence it is doubtful that this is Greville's original material.

X. *ASTEROMPHALUS* Ehrenb.

1. **A. elegans** Grev. in *Q. Jl microsc. Sci.* **7**: 161, fig. 6 (1859). (Pl. 14, Fig. 4; specimen diameter 72 μm)
Californ. guano *Norman* 8.54, BM 1778, holotype.

XI. *AULACODISCUS* Ehrenb.

A detailed monograph of this genus has been undertaken by Burke & Woodward (1963–1970) and continued by Burke (1970–1974). This revision is based on light microscope observations. A recent SEM study on *Aulacodiscus* was presented by Ross & Sims (1970). One of the species they examined was *A. grevilleanus*.

1. **A. amoenus** Grev. in *Trans. microsc. Soc. Lond.* **12**: 10, fig. 3 (1864). (Pl. 14, Fig. 3; specimen diameter 104·5 μm)

Cambridge Estate Barbadoes *Johnson*, BM 2860, holotype; BM 2862, 2863, 3070, 3071, 3122, 3204, 3205.
There are several specimens in the slide collection but only one is labelled as holotype. BM 2860 (MF 26/25) is the holotype. The mountant has deteriorated considerably preventing the use of high magnification. BM 3204 and BM 3205 are syntypes of *A. amoenus* var. *subdecorus* Rattray.

2. **A. angulatus** Grev. in *Trans. microsc. Soc. Lond.* **11**: 71, fig. 15 (1863). (Pl. 14, Fig. 1; specimen diameter 105 μm)
Cambridge Barbadoes *Johnson* 1863, BM 2744, holotype, BM 2895; Barbadoes *Johnson* 1863, BM 2941; Cambridge Barbadoes *Johnson* 1863, BM 2981.
There is a series of manuscript notes which indicate that Greville used BM 2744 as the holotype. The specimen is at an angle and is difficult to photograph clearly. A good specimen has been photographed from BM 2981 (Pl. 14, Fig. 2; specimen diameter 112·5 μm).

3. **A. attenuatus** Rattray in *Jl R. microsc. Soc.* **1888**: 356, pl. 5, fig. 2 (1888). (*A. elegans* Grev. nom. herb., non *A. elegans* Grove & Sturt (1887).) (Pl. 15, Figs 10, 11; specimen diameter 97·5 μm)
Cambridge Barbadoes *Johnson* June 63, BM 2897, lectotype; Cambridge Barbadoes *Johnson* 1862, BM 2758; Cambridge Barbadoes *Johnson* 1864, BM 3203; Barbadoes *Johnson* 1865, BM 3449.
Rattray described this species as new. However, the specimens annotated in the Greville herbarium are all marked as *A. elegans* by Greville. Rattray, who was aware of preoccupation, proposed a new name.

There is no indication which of these slides Rattray used for his illustration (which is a portion of a valve). BM 2897 has been chosen as the lectotype.

4. **A. cinctus** Grev. ex Rattray in *Jl R. microsc. Soc.* **1888**: 365 (1888). (Pl. 15, Figs 6, 9; specimen diameter 100 μm)
Barbadoes 1864, BM 3031, lectotype; Barbadoes *Johnson* 1863, BM 2934; Cambridge Estate Barbadoes *Johnson* 1863, BM 2979; Cambridge Estate Barbadoes *Johnson* 1864, BM 3069, BM 3170, BM 3249, BM 3250; Barbadoes 1865, BM 3245; Barbadoes *Johnson* 1864, BM 3268, BM 3269, BM 3283; Cambridge Barbadoes, BM 4779, BM 4784.
Although Greville named this species he did not describe or publish it. Rattray (1888*b*), in his revision of *Aulacodiscus*, described the species for the first time with acknowledgement to Greville. There is no indication in Greville's notes or in Rattray's text which specimen was used for the type description and so all the above, annotated by Greville, can be considered as syntypes. BM 3031 has been selected as the lectotype.

5. **A. decorus** Grev. in *Trans. microsc. Soc. Lond.* **12**: 82, fig. 2 (1864). (Pl. 15, Figs 7, 8; specimen diameter 120 μm)
Cambridge Barbadoes *Johnson* 1862, BM 2770; Cambridge Barbadoes *Johnson*, BM 2806; Cambridge Barbadoes *Johnson* 1863, BM 2868; Cambridge Barbadoes *Johnson* 1864, BM 3069; Barbadoes *Johnson* 1863, BM 3090; Barbadoes 1865, BM 3116; Cambridge Barbadoes *Johnson* 1864, BM 3123; Barbadoes 1865, BM 3474.
BM 3116 and BM 3069 (Pl. 15, fig. 5; specimen diameter 185 μm) are the only slides that have been annotated by Greville as *A. decorus*. The remaining slides were all annotated at a later date by Rattray. However, Rattray has annotated BM 3116 and BM 3069 as *A. decorus* var. *stoschii*. It seems probable that one of these two slides was used by Rattray to describe his variety and his synonymy has to be doubted on nomenclatural grounds alone. Additionally, some of the specimens on other slides are quite dissimilar to those illustrated by Greville. To establish the distinctness of *A. decorus* sensu Rattray, type specimens of *A. stoschii* need to be examined.

In the detailed study of *Auclacodiscus* by Burke & Woodward, BM 3116 is indicated by Mr R. Ross as being a good representative specimen (1967: 161). They discuss this species along with the related *A. inflatus, A. mammosus,* and *A. cinctus*.

6. **A. extans** Grev. in *Trans. microsc. Soc. Lond.* **12**: 87, fig. 1 (1864). (Pl. 15, Figs 1, 2; specimen diameter 212·5 μm)

Barbadoes 1865, BM 3109, holotype.

7. **A. gigas** Grev. in *Trans. microsc. Soc. Lond.* **13**: 26, fig. 23 (1865). (Pl. 15, Fig. 4; specimen diameter 210 μm)
Cambridge Barbadoes *Johnson* 1863, BM 2903, holotype.

8. **A. grevilleanus** G. Norman in Grev. in *Trans. microsc. Soc. Lond.* **12**: 10, fig. 1 (1864).
Moron, Seville, BM 2692, holotype.
I was unable to find the specimen at the MF location given on the slide.

9. **A. inflatus** Grev. in *Trans. microsc. Soc. Lond.* **11**: 69, fig. 12 (1863). (Pl. 16, Figs 1, 2, 4; specimen diameter 82·5 μm)
Barbadoes deposit *Johnson* 1863, BM 2841, holotype.

10. **A. jonesianus** Grev. in *Trans. microsc. Soc. Lond.* **10**: 24, fig. 5 (1862). (Pl. 15, Fig. 3; specimen diameter 267·5 μm)
Guano *Dr Macrae*, BM 2388, holotype.

11. **A. kilkellyanus** Grev. in *Trans. microsc. Soc. Lond.* **11**: 70, fig. 14 (1863). (Pl. 16, Fig. 5; specimen diameter 82·5 μm)
Barbadoes deposit *Johnson* 1863, BM 2804, holotype.

12. **A. macraeanus** Grev. in *Trans. microsc. Soc. Lond.* **10**: 23, fig. 4 (1862). (Pl. 16, Fig. 3; specimen diameter 135 μm)
Ceylon *Dr Macrae*, BM 2387, lectotype, BM 2450; New Zealand, BM 1683.
There are two slides annotated for this species and, as there is no drawing, either could be the holotype. They are both selected mounts. BM 2387 has been chosen as lectotype. Additionally, Greville refers to a New Zealand slide. This specimen is present on BM 1683.

13. **A. mammosus** Grev. in *Trans. microsc. Soc. Lond.* **11**: 70, fig. 13 (1863). (Pl. 16, Figs 7, 8; specimen diameter 96·5 μm)
Barbadoes *Johnson* 1863, BM 2813, holotype.

14. **A. orientalis** Grev. in *Trans. microsc. Soc. Lond.* **12**: 12, fig. 6 (1864). (Pl. 17, Figs 1–3; specimen diameter 142·5 μm)
Ceylon 1861, BM 2425; Ceylon *Dr Macrae* 1861, BM 2448, BM 2419, lectotype; Ceylon *Dr Macrae*, BM 2466, BM 3394.
There is a drawing in the Greville manuscript collection but no indication of which slide was used for the illustration. Any of the above slides could have been used and must be considered as syntypes. BM 2419 (MF 32/25) has been selected as lectotype.

15. **A. pallidus** Grev. in *Trans. microsc. Soc. Lond.* **11**: 72, fig. 17 (1863).
Barbadoes deposit, BM 2827, holotype.
This is a badly damaged slide and hence it is not possible to present micrographs. Burke (pers. comm. P. A. Sims) has examined the holotype specimen and established several important facts. The specimen is a frustule, rather than a single valve. Greville had not realized this and judged the specimen to have ten processes when there are only five on each valve. Rattray apparently also noticed this fact (Rattray, 1888*b*: 370).

16. **A? paradoxus** Grev. in *Trans. microsc. Soc. Lond.* **11**: 72, fig. 18 (1863). (Pl. 16, Fig. 6; specimen diameter 85 μm)
Barbadoes deposit *Johnson* 1863, BM 2783, holotype.
In the tenth paper in the 'New and rare' series, Greville (1863*d*) published a corrigendum appearing opposite plate IX. He states that this species should have been referred to the genus *Omphalopelta*. The slide is labelled '*Omphalopelta*'.

17. **A. pellucidus** Grev. in *Trans. microsc. Soc. Lond.* **12**: 12, fig. 5 (1864). (Pl. 17, Figs 4, 5; specimen diameter 110 μm)
[Cambridge Estate Barbadoes *Johnson*], BM 2893, holotype.

18. **A. radiatus** Grev. in *Trans. microsc. Soc. Lond.* **12**: 11, fig. 4 (1864). (Not illustrated)
Cambridge Barbadoes *Johnson* 1864, BM 3125; Cambridge Barbadoes *Johnson* 1863, BM 2898, syntypes.

19. **A. sparsus** Grev. in *Trans. microsc. Soc. Lond.* **14**: 123, fig. 6 (1866). (Pl. 17, Fig. 6; specimen diameter 72·5 μm)
Barbadoes 1865, BM 3479, holotype.

20. **A. spectabilis** Grev. in *Trans. microsc. Soc. Lond.* **11**: 71, fig. 16 (1863). (Pl. 18, Figs 1, 2; specimen diameter 132·5 μm)
Barbadoes *Johnson* 1863, BM 2837, holotype.

21. **A. umbonatus** Grev. in *Trans. microsc. Soc. Lond.* **12**: 9, fig. 2 (1864). (Pl. 17, Fig. 7; specimen diameter 92·5 μm)
Cambridge Estate Barbadoes *Johnson* 1863, BM 3051, lectotype; Cambridge Estate Barbadoes *Johnson* 1862, BM 2774.
There is a drawing in the Greville manuscript collection but no indication of which slide he used for the illustration. Either of the above could have been used. BM 3051 has been chosen as lectotype. Although it is a fragment, there is less debris obscuring the valve than that of BM 2774. Additionally, some ink has spilt on to the label of BM 2774, obscuring part of the notes.

XII. *AULISCUS* Ehrenb.

1. **A. ambiguus** Grev. in *Trans. microsc. Soc. Lond.* **11**: 74, fig. 23 (1863). (Pl. 18, Figs 3, 4; specimen diameter 57·5 μm)
Barbadoes *Johnson*, BM 2842; Barbadoes *Johnson* 1862, BM 2815, syntypes.
The coverslip of BM 2815 has probably moved at some time as the specimen can no longer be located at the MF number given on the label by Greville. It is also a badly damaged slide. Greville notes in the protologue: 'I have examined two specimens and a fragment of a third all of which are precisely alike.' The second specimen, BM 2842, has been used for the micrographs.

2. **A. australiensis** Grev. in *Trans. bot. Soc. Edinb.* **8**: 233, fig. 3 (1866).
'Sharks Bay, *Norman* 810' (MS notes, but slide not found).
The drawing in the Greville manuscript collection is annotated thus: 'Shark's Bay – Norman's slides (810 19/17).' This slide does not appear to be in the Greville collection or elsewhere in the BM. The whereabouts of these Norman slides needs further investigation. There is a series of manuscript notes confirming the Norman slide as the holotype. Rattray (1888*a*: 869) had probably seen this slide as he cites the locality data and notes, 'Formerly in the Collection of Mr. George Norman.'

3. **A. barbadensis** Grev. in *Trans. microsc. Soc. Lond.* **13**: 5, fig. 1 (1865). (Pl. 18, Fig. 5; specimen length 50 μm)
Cambridge Barbadoes *Johnson* 1864, BM 3206, holotype.

4. **A. cellulatus** Grev. in *Jl R. microsc. Soc.* **1888**: 904 (1888), in synonymy. (Pl. 18, Figs 7, 8; specimen diameter 65 μm)
Barbadoes *Johnson*, BM 3128, BM 67371, [Ralfs colln.]
Greville's name was never published. Rattray included this species in the synonymy of *Pseudauliscus ralfsianus* (Grev.) Rattray. Only two slides in the BM collection reveal specimens of this taxon: BM 3128 and BM 67371 from Ralfs' collection. The micrograph is from BM 3128.

5. **A. elaboratus** Ralfs ex Grev. in *Trans. microsc. Soc. Lond.* **11**: 51, fig. 19 (1863). (Pl. 18, Fig. 6; specimen diameter 100 μm)
Cambridge Barbadoes *Mr Johnson*, BM 66995, holotype?; Cambridge Barbadoes *Johnson* 1862, BM 2786; Cambridge Barbadoes *Johnson* 1862, BM 2802; Barbadoes *Johnson* 1862, BM 2818; Cambridge Barbadoes *Johnson* 1863, BM 3055; Cambridge Barbadoes *Johnson*, BM 3273.
There is no drawing in the Greville manuscript collection. There are many slides in the Greville

collection which could be considered syntypes. However, in the protologue Greville states: 'kindly communicated by Mr. Ralfs.' It is thus possible that the holotype is a Ralfs' slide. There are two specimens on a Ralfs slide, BM 66995, but only one, MF 28/16, resembles Greville's illustration and hence has been photographed.

6. **A. elegans** Grev. in *Trans. microsc. Soc. Lond.* **11**: 45, fig. 8 (1863). (Pl. 19, Figs 1, 4; specimen diameter 72·5 μm)
Patos Guano *Johnson*, BM 3007 (MF 24/12), lectotype.
There is a drawing of this species in the Greville manuscript collection but two MF numbers are indicated. Of the two, the specimen located at MF 24/12 is less obscured by debris and has been photographed here as the lectotype.

7. **A. hardmanianus** Grev. in *Trans. microsc. Soc. Lond.* **14**: 6, fig. 17 (1866). (Pl. 19, Fig. 3; specimen diameter 137·5 μm)
Monterey, BM 10108, L.H. no. 139, holotype.

8. **A. johnsonianus** Grev. in *Trans. microsc. Soc. Lond.* **11**: 51, fig. 20 (1863). (Pl. 19, Fig. 5; specimen diameter 80 μm)
Cambridge Estate Barbadoes 1863, BM 3065, holotype.

9. **A. macraeanus** Grev. in *Trans. microsc. Soc. Lond.* **11**: 51, fig. 18 (1863). (Pl. 19, Fig. 7; Pl. 20, Fig. 1; specimen diameter 97·5 μm)
Ceylon *Dr Macrae* 1861, BM 2409, holotype.

10. **A. mirabilis** Grev. in *Trans. microsc. Soc. Lond.* **11**: 47, fig. 11 (1863).
Monterey Stone, Br. 11 (slide not found).
Greville made the following remarks in the protologue: 'It was first bought under my notice by Mr. Norman, but his specimen had unfortunately sustained some superficial injury. That subsequently supplied by Mr. Browne leaves nothing to be desired. My own specimen is a fragment.'

Additionally, the drawing indicates that the slide supplied by Mr Browne was used for the illustration, with the following annotation: 'Br. 11, 24/32.' This slide has not been located in the Greville collection or elsewhere in the BM. It's whereabouts requires further investigation. There are no slides in the Greville collection purported to be *A. mirabilis*. The only suitable lectotype, if one need be required, is in the Hardman collection, BM 10130, which has a label that states: 'Named by Dr Greville.'

11. **A. moronensis** Grev. in *Trans. microsc. Soc. Lond.* **12**: 83, fig. 6 (1864). (Pl. 19, Fig. 6; specimen diameter 63 μm)
Moron deposit Seville *Johnson* 1863, BM 2913, BM 2916.
Although there is a drawing in the Greville manuscript collection annotated as 'Norman 451', I have not been able to trace this slide. Two other slides are present and both are regarded as syntypes. This species has been examined in detail by Sullivan (1987), who concludes *A. moronensis* is a synonym of *A. pruinosus* J. W. Bail.

12. **A. nebulosus** Grev. in *Trans. microsc. Soc. Lond.* **11**: 74, fig. 21 (1863). (Pl. 19, Fig. 8; Pl. 20, Fig. 2; specimen diameter 85 μm)
Cambridge Estate Barbadoes *Johnson* 1863, BM 2898, lectotype, BM 3061; Cambridge Estate Barbadoes *Johnson* 1862, BM 2821.

The correct name for this species is *Pseudauliscus grevillei* (see appendix).

13. **A. normanianus** Grev. in *Trans. microsc. Soc. Lond.* **12**: 82, fig. 11 (1864). (Pl. 20, Fig. 3; specimen diameter 112·5 μm)
Moron deposit *Johnson* 1863, BM 2915, BM 2917, lectotype, BM 2919, BM 2920.
There is a drawing of this species in the Greville manuscript collection but it is not annotated. BM 2917 has been chosen as the lectotype.

14. **A. notatus** Grev. in *Trans. microsc. Soc. Lond.* **13**: 5, fig. 2 (1865). (Pl. 20, Fig. 4; specimen diameter 37·5 μm)

[Cambridge Estate Barbadoes *Johnson*], BM 3138, holotype.
This slide has suffered some damage, hence the poor quality of the micrograph.

15. **A. ornatus** Grev. in *Trans. microsc. Soc. Lond.* **12**: 88, fig. 2 (1864). (Pl. 20, Figs 6, 7; specimen diameter 55 μm)
Cambridge Barbadoes 1864, BM 3038, holotype.

16. **A. parvulus** Grev. in *Trans. microsc. Soc. Lond.* **11**: 74, fig. 22 (1863). (Pl. 20, Fig. 5; specimen diameter 34·5 μm)
Cambridge Barbadoes *Johnson* 1863, BM 2862, holotype.

17. **A. racemosus** Ralfs ex Grev. in *Trans. microsc. Soc. Lond.* **11**: 46, fig. 9 (1863). (Pl. 21, Figs 1, 4, 5; specimen diameter 62 μm)
Barbadoes Cambridge *Johnson* [Ralfs colln.], BM 66853, holotype?; Barbadoes, Cambridge *Johnson* 1862, BM 2786; Barbadoes, *Johnson*, 1862, BM 2790; Barbadoes, Cambridge, *Johnson*, 1863, BM 2902.
Although there is a drawing of this species in the Greville manuscript collection, there are no slide details appended. The protologue states that the slide was 'Communicated by J. Ralfs, Esq.' and hence Ralfs' slide is probably the holotype.

18. **A. ralfsianus** Grev. in *Trans. microsc. Soc. Lond.* **11**: 52, fig. 21 (1863). (Pl. 21, Fig. 6; specimen diameter 102·5 μm)
Bridgewater Barbadoes *Johnson* 1863, BM 2737, holotypes.

19. **A. recticulatus** Grev. in *Trans. microsc. Soc. Lond.* **11**: 46, fig. 10 (1863). (Pl. 21, Figs 2, 3; specimen diameter 89·5 μm)
From *Melobesia* on *Haliotis tuberculata*, coast of Peru, BM 19772 (MF 20/21), holotype.
Greville noted two localities in the protologue: 'Cape of Good Hope, G. M. Browne. From *Melobesia* on *Haliotis tuberculata*, Peru, F. C. S. Roper, Esq.' The drawing in the Greville manuscript collection is marked with the Roper locality and hence must be considered the holotype. The slide is in the Roper collection in the BM.

XIII. *BERKELEYA* Grev.

This genus has recently been studied in detail by Cox (1975*a, b*) and the generic definition emended. The type species, *B. fragilis*, has also been examined in both the light and electron microscope (see Cox, 1975*a*, fig. 6; 1975*b*, fig. 10, also p. 214 for an amended description).

1. **B. fragilis** Grev. in *Scott. Cryptog. Fl.* **5**: pl. 298 (1827). (Pl. 21, Fig. 7; specimen length 65 μm)
On *Zostera marina*, Appin, *Capt. Carmichael*, BM 77941, BM 81243, BM 81244, BM 81245, Holotype, ex K.
This material forms part of the permanent loan from Kew. The slides were recently made from the herbarium sheets. The micrograph is from BM 77941.

XIV. *BIDDULPHIA* Gray

1. **B. barbadensis** Grev. in *Trans. bot. Soc. Edinb.* **8**: 437, fig. 15 (1866). (Pl. 22, Figs 7–9; valve length 25 μm, frustule width 65 μm)
Barbadoes 1866, BM 3480, holotype.
Greville states: 'The frustule now figured is the only one which has come under my notice.' Although this is not identified to species on the slide label, it is quite clearly that of Greville's figure and hence is the holotype. Additionally, a set of manuscript notes clearly identify this specimen as the holotype.

2. **B. chinensis** Grev. in *Trans. microsc. Soc. Lond.* **14**: 81, fig. 16 (1866). (Pl. 25, Fig. 3; specimen length 206·5 μm)
Hong Kong Harbour, BM 2998.
There is a drawing in the Greville manuscript collection but no slide number is written on it. BM

2998 is the only slide catalogued for this species, of which there are two specimens indicated by MF numbers. The micrograph is the best specimen of the two. The mountant has drastically receded and renders photography difficult.

3. **B. corpulenta** Grev. in *Trans. microsc. Soc. Lond.* **13**: 51, fig. 16 (1865). (Pl. 22, Fig. 6; specimen length 155 μm)
Cambridge Barbadoes *Johnson* 1863, BM 3078, holotype.
The specimen is situated on a damaged part of the slide and hence difficult to photograph. Much of the structure is reduced in clarity as a consequence.

4. **B? decorata** Grev. in *Trans. microsc. Soc. Lond.* **13**: 99, fig. 7 (1865). (Pl. 21, Fig. 8; specimen length 66 μm)
Cambridge Barbadoes *Johnson* 1864, BM 3432, holotype; Cambridge Barbadoes 1865, BM 3447.
There are no drawings of this species in the Greville manuscript collection. There are two specimens in the slide collection and in the protologue Greville states: 'I have only seen two specimens of this diatom', hence both must be considered as types. However, the specimen on BM 3447 is situated obliquely, whilst that of BM 3432 is identical to the published figure and hence is the holotype. According to Mr R. Ross, careful examination of the holotype shows that it is a broken specimen of a tripolar diatom.

5. **B. elegantula** Grev. in *Trans. microsc. Soc. Lond.* **13**: 50, figs 12–14 (1865). (Pl. 22, Figs 4, 5; specimen length 51·5 μm)
Cambridge Estate Barbadoes *Johnson* 1863, BM 3073; Barbadoes *Johnson* 1864, BM 3412; Cambridge Barbadoes *Johnson* 1865, BM 3434, syntypes.
There are four drawings in the Greville manuscript collection but only three were published. The drawing for figures 12 and 13 are on one card and annotated as [BM] 3073, 14/29. This specimen corresponds to figure 12. The second card has two drawings, one of a valve view and one of a girdle view, but only the valve view was used in the publication. The annotation on this card is [BM] 3412 which corresponds to the unpublished girdle view. The originals of figures 13 and 14 have not been located.

6. **B. fimbriata** Grev. in *Trans. microsc. Soc. Lond.* **13**: 6, fig. 4 (1865). (Pl. 22, Figs 1, 2; valve length 92·5 μm)
Barbadoes *Johnson* 1864, BM 3197, lectotype; Cambridge Barbadoes *Johnson* 1863, BM 3186.
There are two drawings in the Greville manuscript collection but no indication is given as to which slides they are taken from. Greville also notes that he has seen 'half a dozen specimens.' The specimen on BM 3197 has several girdle bands and is closer to the published figure than the other specimens.

7. **B. gigantea** Grev. in *Trans. microsc. Soc. Lond.* **12**: 13, fig. 9 (1864). (Pl. 23, Figs 1, 2; specimen length 205 μm)
Cambridge Barbadoes *Johnson* 1862, BM 2770, holotype.

8. **B. inflata** Grev. in *Trans. microsc. Soc. Lond.* **13**: 50, fig. 15 (1865). (Pl. 23, Figs 3, 4; valve length 88 μm)
Barbadoes *Johnson* 1864, BM 3428, holotype.

9. **B. johnsoniana** Grev. in *Trans. microsc. Soc. Lond.* **14**: 6, figs 14, 15 (1866). (Pl. 22, Fig. 3, Pl. 23, Figs 5, 6; valve length 170 μm)
Moron deposit Seville *Johnson* 1865, BM 3396, syntypes.
There are two drawings included in the original publication and two drawings in the Greville manuscript collection. Both of these specimens are present on the same slide. Mr R. Ross has inspected these specimens and confirmed that they are those that Greville illustrated and hence are syntypes.

10. **B. longicruris** Grev. in *Q. Jl microsc. Sci.* **7**: 163, fig. 10 (1859). (Pl. 23, Figs 7–9; specimen length 32·5 μm)

Californ. guano *J. T. Norman* 58, BM 1773, lectotype; Californ. guano *J. T. Norman*, BM 1770; Californ. guano *J. T. Norman* 8.58, BM 1820.

11. **B? mammosa** Grev. in *Trans. microsc. Soc. Lond.* **14**: 7, fig. 16 (1866). (Pl. 24, Figs 1, 2; specimen length 96·5 μm)
Barbadoes 1865, BM 3455, holotype.

12. **B. minutissima** Grev. in *Trans. bot. Soc. Edinb.* **8**: 437, fig. 14 (1866). (Pl. 24, Fig. 3; valve length 12·5 μm, frustule length 31 μm)
Zanzibar *Prof. H. L. Smith* 1865, BM 3562, lectotype, BM 3563, BM 3564.

13. **B. nitida** Grev. in *Trans. microsc. Soc. Lond.* **13**: 52, fig. 11 (1865). (Pl. 24, Figs 4, 6; valve length 48·5 μm, frustule length 82·5 μm)
Barbadoes, BM 3254, holotype?

14. **B? podagrosa** Grev. in *Trans. microsc. Soc. Lond.* **14**: 82, fig. 17 (1866). (Pl. 24, Figs 5, 8; valve length 65 μm, frustule length 98·5 μm)
Barbadoes *Johnson* 1863, BM 3054; Cambridge Barbadoes *Johnson* 1863, BM 3072.
In the Greville manuscript collection there is a drawing annotated with two numbers. These specimens should be considered syntypes. However, there are some manuscript notes which cite only BM 3054. It is likely that this was used for the description rather than BM 3072. The type slides have previously been studied by Wise (1952: 407) and further study was undertaken recently in connection with some new Biddulphioid genera by Ross & Sims (1985: 317).

15. **B. punctata** Grev. in *Trans. microsc. Soc. Lond.* **12**: 83, fig. 10 (1864). (Pl. 24, Fig. 7; specimen length 120 μm)
Cambridge Barbadoes *Johnson* 1863, BM 2894, holotype.

16. **B. roperiana** Grev. in *Q. Jl microsc. Sci.* **7**: 163, figs 11–13 (1859). (BM 1763, Pl. 25, Figs 1, 2; specimen length 67·5 μm; BM 1772, Pl. 24, Figs 9, 10; specimen length 38·5 μm)
Monterey Sea weed [*G.*] *Norman* 12.58, BM 1632; Patos guano 8.58 *J. T. Norman*, BM 1755; Patos guano 8.58, BM 1758, BM 1818; Californ. guano, BM 1762, BM 1765, BM 1782; [Californ. guano], BM 1763, BM 1776; Californ. guano *J. T. Norman* 9.58, BM 1768; Californ. guano *J. T. Norman* 58, BM 1772, BM 1797, syntypes.
Two localities were given in the protologue: Californian guano and Monterey. The Monterey seaweed sample was not used for the illustrations. Greville included three figures of this species with the description but no drawings exist in the manuscript collection. All the above slides are syntypes. An investigation of the slides helps reveal which specimens were used for the illustrations. BM 1763 was most probably the specimen in figure 11; BM 1797 (not illustrated) was the specimen in figure 12; and BM 1772 was the specimen in figure 13.

Later Greville stated: 'I am now convinced that my *B. roperiana* is nothing more than one of the endless varieties of *B. aurita*.' (Greville, 1866*c*: 81.)

17. **B. sinuata** Grev. in *Trans. microsc. Soc. Lond.* **13**: 49, fig. 10 (1865).
Barbadoes *Johnson* 1862, BM 2815, holotype.
Although all the relevant information is available on the drawing in Greville's manuscripts, there is a note in the slide collection which states: 'Slide and coverslip smashed to atoms. A. G. [Anthony Gepp] February 1915.' The specimen cannot be located and photographed.

18. **B. spinosa** Grev. in *Trans. microsc. Soc. Lond.* **13**: 6, fig. 3 (1865). (Pl. 25, Fig. 4; specimen length 73·5 μm)
Barbadoes 1865, BM 3114, holotype?; Cambridge Barbadoes *Johnson* 1864, BM 3125.
There are two drawings in the Greville manuscript collection, annotated with the above two slide numbers. These are the only slides Greville referred to and hence must be considered syntypes. However, BM 3125 is not orientated at the same angle as that of the illustration. It is likely that BM 3114 was used for the published figure. This specimen has been used for the micrograph.

19. **B. tenuicornis** Grev. in *Trans. microsc. Soc. Lond.* **13**: 51, fig. 17 (1865). (Pl. 25, Figs 5, 6; specimen length 68·5 μm)
Barbadoes Cambridge Estate *Johnson* 1862, BM 2777, holotype.

XV. *BRIGHTWELLIA* Ralfs

This genus has recently been reviewed by Andrews (1986).

1. **B. elaborata** Grev. in *Trans. microsc. Soc. Lond.* **9**: 73, fig. 1 (1861). (Pl. 25, Figs 7, 10; specimen diameter 73·5 μm, central part of valve only illustrated)
Barbadoes *Johnson* 1863, BM 2099, holotype.

2. **B. johnsonii** ['*Johnsoni*'] Ralfs ex Grev. in *Trans. microsc. Soc. Lond.* **14**: 4, fig. 11 (1866). (Pl. 25, Figs 8, 9; specimen diameter 91·5 μm)
Springfield Barbadoes *Hardman* 1864, BM 3341, isotype.
The protologue for this species mentions both Cambridge and Springfield estates for the locality ('most abundant in the latter.') There is a drawing in the Greville manuscript collection which is marked 'Barbadoes, Springfield H(21)', suggesting that Greville used a Hardman slide for his illustration. The slide in the Greville collection is probably isotype material and has been used for the micrographs. Additionally, two slides in the Hardman collection are considered isotypes, one of which may be the holotype: BM 10159 and BM 10160.

XVI. *CAMPYLODISCUS* Ehrenb. ex Kütz.

1. **C. ambiguus** Grev. in *Trans. microsc. Soc. Lond.* **8**: 31, fig. 5 (1860). (Pl. 26, Figs 1, 2; specimen length 65·5 μm)
Jamaica, BM 1708, lectotype, BM 1711, BM 1835.
Two localities are given in the protologue: 'In washings of small algae from Jamaica' and 'On *Spondyli* (fragment) in a slide communicated by Mr. George Norman'. The lectotype is from the former locality.

2. **C. biangulatus** Grev. in *Trans. microsc. Soc. Lond.* **10**: 20, fig. 2 (1862). (Pl. 26, Figs 3, 4; specimen length 105·5 μm)
Ceylon *Dr Macrae*, BM 2385, lectotype, BM 2421, BM 2467.

3. **C. browneanus** Grev. in *Trans. microsc. Soc. Lond.* **10**: 89, fig. 2 (1862).
Manilla Shell scrapings *G. M. Browne*, BM 2382, BM 4250.
These two slides are the only ones from the type locality collected by G. M. Browne. However, on neither slide is there a specimen of *C. browneanus* and the type slide remains to be discovered.

4. **C. crebrecostatus** Grev. in *Trans. microsc. Soc. Lond.* **11**: 14, fig. 6 (1863).
'Port Jackson, New South Wales; Dr. Roberts.'
There is no drawing or slide indicated in the Greville collections. In the protologue Greville states: 'In a mounted slide presented to me by Dr. Roberts.' This slide has not been located.

5. **C. diplostictus** G. Norman ex Grev. in *Trans. microsc. Soc. Lond.* **8**: 31, fig. 6 (1860). (Pl. 26, Figs 5, 6; specimen length 182·5 μm)
Shark Bay *Norman*, BM 1946, lectotype; Ascidians Sharks Bay Australia (*Dr MacDonald*) *Norman* (213), 59, BM 1948.

6. **C. ecclesianus** Grev. in *Q. Jl microsc. Sci.* **5**: 10, fig. 5 (1857). (Pl. 26, Figs 7, 8; specimen length 86·5 μm)
Trinidad *Mrs Eccles*, BM 999, holotype?
No drawing exists in Greville's manuscripts for this species. This specimen is the only one which corresponds to the published figure.

7. **C. fenestratus** Grev. in *Q. Jl microsc. Sci.* **5**: 9, fig. 4 (1857). (Pl. 26, Fig. 9; specimen length 120 μm)

Trinidad *Mrs Eccles* 9.55, BM 995, holotype?
No drawing exists in Greville's manuscripts for this species. This specimen is the only one which corresponds to the published figure.

8. **C. humilis** Grev. in *Trans. bot. Soc. Edinb.* **8**: 233, fig. 1 (1866). (Pl. 26, Fig. 10; specimen length 24·5 μm)
[Woodlark Island *Dr Roberts*], BM 2729, holotype.

9. **C. imperialis** Grev. in *Trans. microsc. Soc. Lond.* **8**: 30, fig. 3 (1860). (Pl. 26, Fig. 11; specimen length 135 μm)
Nassau W. Ind., BM 1744, lectotype; Shell scrapings Nassau W. Ind., BM 1732.
Greville states in the protologue that: 'In one slide only does a perfect example of this species now figured occur.' A check of the relevant slides revealed the specimen Greville referred to on slide BM 1744. This has been designated as lectotype.

10. **C. kittonianus** Grev. in *Trans. microsc. Soc. Lond.* **8**: 32, fig. 7 (1860). (Pl. 27, Figs 1, 2; specimen length 142·5 μm)
On *Tridacna* W. Indies *Kitton* 59, BM 1947 (MF 26/27), lectotype.
Greville gave two localities in the protologue. Slides of the second, 'On *Spondyli*; George Norman, Esq', have only fragments present.

11. **C. normanianus** Grev. in *Trans. microsc. Soc. Lond.* **8**: 29, fig. 1 (1860).
'In cleanings of *Spondyli*; George Norman, Esq.'
There is no drawing or slide indicated in the Greville collections.

12. **C. notatus** Grev. in *Trans. microsc. Soc. Lond.* **8**: 31, fig. 4 (1860).
'In cleanings of *Spondyli*; George Norman, Esq.'
There is no drawing or slide indicated in the Greville collections.

13. **C. ornatus** Grev. in *Trans. microsc. Soc. Lond.* **11**: 13, fig. 3 (1863). (Not illustrated)
On *Tridacna* W. Indies *Kitton*, BM 2567.
There is a drawing in the Greville manuscript collection of this species, but no information is given as to which slide was used for the description.

14. **C. robertsianus** Grev. in *Trans. microsc. Soc. Lond.* **11**: 14, fig. 5 (1863). (Pl. 27, Figs 3, 4; specimen length 97·5 μm)
Harvey Bay Queensland *Dr Roberts* 1862, BM 2674, holotype.
The drawing in the manuscript collection is annotated with 'Harvey Bay 10, 30/32'. The only slide which has a specimen at those MF co-ordinates is the above and hence is considered the holotype.

15. **C. stellatus** Grev. in *Q. Jl microsc. Sci.* **7**: 157, fig. 3 (1859). (Pl. 27, Figs 5, 6; specimen length 102·5 μm)
Californian guano *J. T. Norman* 8.58, BM 1779, holotype.

16. **C. undulatus** Grev. in *Q. Jl microsc. Sci.* II, **3**: 229, fig. 4 (1863). (Pl. 26, Fig. 12; specimen length 88·5 μm)
[Bermuda in mud brought up on a fluke of an anchor *G. Norman*], BM 2695, holotype?, BM 2694.
In the Greville manuscript collection there is a drawing with two numbers. The numbers refer to two slides which have blank labels but using the MF co-ordinates two specimens were located. BM 2695 is probably the holotype (MF 15/26). Additional material is present on slides BM 4847 and BM 4859.

17. **C. wallichianus** Grev. in *Trans. microsc. Soc. Lond.* **11**: 13, fig. 4 (1863). (Pl. 27, Figs 7, 8; specimen length 102·5 μm)
Dredged off St. Helena *Dr Wallich*, BM 3951, lectotype; Harvey Bay *Dr Roberts* 1862, BM 2676; Off St. Helena *Wallich*, BM 3950; St. Helena, BM 3966.
There is no drawing of this species in the Greville manuscript collection. The slides indicated

above are those that correspond to the type localities given and marked by Greville for this species.

XVII. *CESTODISCUS* Grev.

1. **C. johnsonianus** Grev. in *Trans. microsc. Soc. Lond.* **13**: 48, fig. 8 (1865). (Pl. 27, Figs 10, 11; specimen diameter 51·5 μm)
Moron deposit Seville *Johnson* 1865, BM 3396, holotype?
No drawing exists in Greville's manuscripts for this species. Greville states in the protologue: 'extremely rare, Mr. Johnson and myself have only found one specimen each.' The above slide has one specimen, the other specimen is located on BM 3238.

2. **C. (?) ovalis** Grev. in *Trans. microsc. Soc. Lond.* **13**: 49, fig. 9 (1862). (Pl. 27, Fig. 9; specimen length 101·5 μm)
Moron deposit Seville *Hardman* 1865, BM 3238; Moron deposit Seville *Rev. T. G. Stokes* 1866, BM 3235.
There is a drawing of this species in the Greville manuscript collection but there is no number indicating a slide. Although BM 3235 is attributed to Rev. T. G. Stokes as collector, no specimen is indicated on the label and the date is later than that of the published species. A micrograph has been included from BM 3238, but this is unlikely to be type material.

3. **C. pulchellus** Grev. in *Trans. microsc. Soc. Lond.* **14**: 123, fig. 5 (1866).
Nankaurie deposit, Nicobar Islands, *G. Norman*.
There is a drawing in the Greville manuscript collection that is annotated 'Nankaurie, 26/39' but no slide number is given. The holotype specimen has yet to be located.

4. **C. stokesianus** Grev. in *Trans. microsc. Soc. Lond.* **14**: 123, fig. 4 (1866).
Moron deposit Seville *Rev. T. G. Stokes*, BM 3235, holotype?
No drawing exists in Greville's manuscript collection for this species, nor has any specimen been located in the Greville slide collection.

XVIII. *CLADOGRAMMA* Ehrenb.

1. **C. conicum** Grev. in *Trans. microsc. Soc. Lond.* **13**: 97, figs 1–2 (1865). (Not illustrated)
Cambridge Estate Barbadoes *Johnson* 1865, BM 3443, BM 3448.
There is one drawing in the Greville manuscript collection annotated with two numbers. There is also an extra drawing which was apparently not published. BM 3443 (MF 27/15) corresponds to Greville's figure 1, whilst BM 3448 (MF 30/35) corresponds to Greville's figure 2. These must both be regarded as syntypes. The specimens are situated at difficult angles for any useful photography.

XIX. *CLAVULARIA* Grev.

1. **C. barbadensis** Grev. in *Trans. microsc. Soc. Lond.* **13**: 24, figs 1–3 (1865). (BM 3080, Pl. 28, Figs 8, 10; specimen length 161·5 μm; BM 3273, Pl. 28, Figs 7, 9; specimen length 137·5 μm)
Barbadoes Cambridge Estate 1863, BM 3273; Barbadoes *Johnson* 1863, BM 3080; BM 2863, 3049, 3076, 3080, 3086, 3093, 3095, 3103, 3135, 3144, 3177, 3183, 3206, 3214, 3243, 3246, 3259, 3267, 3273, 3275, 3280, 3282, 3411, 3419, 3421, 3429, 3430, 3432, 3438, 3442, 3448, 3461, 3463, 3474, 3507, 3511, syntypes.
There is a drawing of this species in the Greville manuscript collection but no slide numbers to identify those used for the figures.

XX. *COCCONEIS* Ehrenb.

1. **C. armata** Grev. in *Trans. microsc. Soc. Lond.* **14**: 126, fig. 13 (1866). (Pl. 28, Fig. 6; specimen length 47·5 μm)
Barbadoes 1866, BM 3480, holotype.

2. **C. arraniensis** Grev. in *Q. Jl microsc. Sci.* **7**: 80, fig. 2 (1859). (Pl. 29, Figs 1–3; specimen length 36·5 μm)
Arran 57, BM 1560, holotype?
There is no drawing in the Greville manuscript collection but as this is the only slide catalogued for this species, it is assumed to be the holotype.

3. **C. barbadensis** Grev. in *Trans. microsc. Soc. Lond.* **12**: 14, fig. 10 (1864). (Pl. 29, Figs 5, 6; specimen length 86 μm)
Barbadoes *Johnson*, BM 2751, holotype.

4. **C. coelata** Arn. ex Grev. in *Q. Jl microsc. Sci.* II, **2**: 234, figs 5–6 (1862). (Pl. 29, Fig. 4; specimen length 32·5 μm)
Eupleuria ocellata on *Ballia*, New Zealand *Walker-Arnott* 56, (S. 631), BM 1492, syntypes.
There is a drawing in the Greville manuscript collection but it is not annotated with a slide number. However, this is the only slide in the collection of Arnott's material and is probably the holotype slide. There are numerous specimens on the slide, which should all be considered syntypes.

5. **C. crebrestriata** Grev. in *Q. Jl microsc. Sci.* **5**: 9, fig. 2 (1857). (Pl. 29, Figs 7, 8; specimen length 59 μm).
Trinidad *Eccles* 9.56, BM 997, lectotype; Trinidad *Mrs Eccles* 9.55, BM 995.
BM 997 has been chosen as lectotype because the alternative specimen, on BM 995, is partially obscured by debris.

6. **C. grantiana** Grev. in *Trans. microsc. Soc. Lond.* **9**: 72, fig. 18 (1861). (Pl. 29, Fig. 9; specimen length 27·5 μm)
Macduff on sea shells *Mr Grant*, BM 2244, syntypes.
There is a drawing in the Greville manuscript collection of this species but no indication as to which slide is the holotype. The only slide that corresponds to the locality details is the one given above. As it contains many specimens they must all be considered syntypes. The slide is in poor condition and only allows effective use at low magnification.

7. **C. granulifera** Grev. in *Trans. microsc. Soc. Lond.* **9**: 73, fig. 19 (1861). (Pl. 29, Fig. 10; specimen length 36·5 μm)
On Clam shells Carrickfergus *Mr Grant*, BM 2243, syntypes.
There is a drawing in the Greville manuscript collection of this species but no indication is given as to which slide is the holotype. BM 2243 is the only slide from the locality given in the protologue. As it contains many specimens they are all considered syntypes. The slide is in a poor condition and only allows effective use at low magnification.

8. **C. inconspicua** Grev. in *Q. Jl microsc. Sci.* **5**: 9, fig. 3 (1857).
Trinidad *Mrs W. Eccles*.
There is no indication either in the manuscript notes or the slide collection which slide Greville used for the published illustration.

9. **C. naviculoides** Grev. in *Trans. microsc. Soc. Lond.* **13**: 34, fig. 24 (1865). (Pl. 29, Figs 11, 12; specimen length 60·5 μm)
Barbadoes, *Johnson* 1863, BM 2845, holotype?
This is the only slide in the Greville collection which has a specimen of this taxon and therefore is probably the holotype. The slide is unfortunately damaged and it is only possible to examine it at low magnification.

10. **C. punctatissima** Grev. in *Q. Jl microsc. Sci.* **5**: 8, fig. 1 (1857). (Pl. 29, Figs 13, 14; specimen length 45 μm)
Trinidad 56, BM 994, holotype?
This is the only slide in the collection that is annotated for this species, although many other slides from the same locality are present. The slide is rather thick which prevents the use of high magnification.

11. **C. regalis** Grev. in *Q. Jl microsc. Sci.* **7**: 156, fig. 1 (1859). (Pl. 30, Figs 6, 7; specimen length 65·5 μm)
Californ. guano *J. T. Norman*. BM 1777, holotype?
This is the only slide in the collection from the type locality and therefore is probably the holotype. Several other slides are marked by Greville for specimens of *C. regalis* but none are from the type locality.

XXI. *COSCINODISCUS* Ehrenb.

Coscinodiscus, a large marine plankton genus, is currently being revised (Hasle & Sims, 1986). Many of Greville's species will need to be re-allocated to other genera. Several species have already been transferred to *Azpeitia* M. Perag. (Fryxell, Sims & Watkins, 1986).

1. **C. angulatus** Grev. in *Trans. microsc. Soc. Lond.* **12**: 9, fig. 11 (1864). (Pl. 30, Fig. 3; specimen diameter 70 μm)
Cambridge Barbadoes *Johnson* 1862, BM 2825, holotype.

2. **C. armatus** Grev. in *Trans. microsc. Soc. Lond.* **9**: 42, fig. 5 (1861). (Pl. 30, Figs 4, 5; specimen diameter 52·5 μm)
Barbadoes deposit, BM 2080, lectotype, BM 2082, BM 2168.
The plate legend states that the Barbados specimens illustrating this paper were described from a series of slides supplied by Mr J. T. Norman. I have not been able to trace these slides and hence a lectotype has been selected from Greville's slide collection.

3. **C. barbadensis** Grev. in *Trans. microsc. Soc. Lond.* **9**: 43, fig. 9 (1861).
Barbadoes deposit, BM 2072, BM 2076, BM 2077, syntypes.
The plate legend states that the Barbados specimens illustrating this paper were described from a series of slides supplied by Mr J. T. Norman. These slides have not been traced. A lectotype has not been designated.

4. **C. biradiatus** Grev. in *Trans. microsc. Soc. Lond.* **9**: 42, fig. 7 (1861). (Pl. 31, Fig. 1; specimen diameter 80 μm)
Barbadoes deposit, BM 2064, BM 2067, BM 2082 lectotype, BM 2111, BM 2181.
The plate legend states that the Barbados specimens illustrating this paper were described from a series of slides supplied by Mr J. T. Norman. I have not been able to trace these slides and hence a lectotype has been selected from Greville's collection.

This species has recently been studied in detail and transferred to the genus *Azpeitia* (Fryxell, Sims & Watkins, 1986).

5. **C. elegans** (Grev. in *Trans. microsc. Soc. Lond.* **14**: 3, fig. 6 (1866). (Pl. 31, Figs 2, 4; specimen diameter 96·5 μm)
Monterey, BM 10221, L. H. 281, holotype.
The type specimens of *Coscinodiscus elegans* and *Cosmiodiscus elegans* share the same slide, BM 10221, causing some confusion. The two species are quite distinct but unfortunately the MF number given for *Cosmiodiscus elegans*, if applied in normal use, i.e. left hand side of the slide down, does not reveal any specimen. The slide needs to be reversed for the MF number to locate the specimen. The type of *Cosmiodiscus elegans* is a solitary specimen, whereas that of *Coscinodiscus elegans* is placed within a cluster of specimens. The drawing for *Coscinodiscus elegans* is marked 'H. 49 Monterey' and the slide is marked in the right hand corner with a diamond marker inscription as L.H.49.

6. **C. elegantulus** Grev. in *Trans. microsc. Soc. Lond.* **9**: 42, fig. 8 (1861). (Pl. 31, Fig. 3; specimen diameter 42·5 μm)
Barbadoes deposit, BM 2064, BM 2069, BM 2075 lectotype, BM 2076, BM 2078, BM 2080, BM 2081, BM 2085, BM 2096, BM 2098.
The plate legend states that the Barbados specimens from this paper were described from a series of slides supplied by Mr J. T. Norman. I have not been able to trace these slides and hence a lectotype has been selected from Greville's slide collection.

This species has been placed in the genus *Azpeitia* by Sims in Fryxell, Sims & Watkins (1986).

7. **C. excavatus** Grev. ex Ralfs in Pritch., *Hist. Inf.*: 829 (1861). (Pl. 32, Figs 3, 6, 7: specimen diameter 245 μm)
Piscataway Earth Feb. 59, BM 67530 (Ralfs colln), holotype?; Piscataway U.S. deposit *Bailey Dallas*, BM 1307.
Although this species bears a Greville name it was not published until Ralfs' account in the *Hist. Inf.* It is more than likely the holotype slide was that of Ralfs' own collection. Only one slide in Greville's collection is from Piscataway, the type locality. Other specimens are from Barbados, Cambridge estate (BM 3137, BM 3143) and South Naparima, Trinidad (BM 3820).

8. **C. griseus** Grev. in *Q. Jl microsc. Sci.* II, **3**: 230, fig. 7 (1863). (Pl. 31, Fig. 6; specimen diameter 89·5 μm)
Cambridge Barbadoes *Johnson* 1862, BM 2772, holotype.
The drawing in the manuscript collection has both a slide number and a MF location. Greville had not included the species name on the slide label.

9. **C. lewisianus** Grev. in *Trans. microsc. Soc. Lond.* **14**: 78, figs 8–10 (1866). (BM 1304, Pl. 31, Fig. 7; specimen diameter 53·5 μm; BM 1305, Pl. 31, Fig. 9; specimen diameter 89·5 μm)
Rappahannock U.S. 56, BM 1304, lectotype, BM 1305; Rappahannock Virginia, *Dallas*, BM 1306.
There is no drawing of this species in the Greville manuscript collection. However, there are some notes Greville made whilst writing the paper which indicate that the above slides were examined. One of these has been selected as a lectotype.

10. **C. macraeanus** Grev. in *Trans. microsc. Soc. Lond.* **13**: 46, fig. 4 (1865). (Pl. 31, Figs 5, 8; specimen diameter 128·5 μm)
Guano *Dr Macrae*, BM 2444, holotype.

11. **C. moronensis** Grev. ex Rattray in *Proc. R. Soc. Edinb.* **16**: 458, pl. II, fig. 16 (1890). (Pl. 30, Figs 1, 2; specimen diameter 73·5 μm)
Moron deposit Seville *Johnson* 1864, BM 3348, holotype.
Rattray used a Greville manuscript name for his description of *C. moronensis*. Greville, however, wanted to place the species in the genus *Cestodiscus*. In his published figure, Rattray erroneously refers to Johnson as the authority on the plate legend.

12. **C. mossianus** Grev. in *Trans. microsc. Soc. Lond.* **13**: 25, fig. 22 (1865). (Pl. 32, Fig. 1; specimen diameter 130·5 μm)
Cambridge Barbadoes *Johnson* 1864, BM 3248, holotype?
Although there is no drawing in the Greville manuscript collection, this is the only slide that has a specimen of this taxon and is probably the holotype.

13. **C. obliquus** Grev. ex Rattray in *Proc. R. Soc. Edinb.* **16**: 575, pl. 1, fig. 14 (1890). (Pl. 32, Figs 2, 4, 5; specimen diameter 171·5 μm)
Monterey Stone, BM 1971.
Although Rattray gives two localities for this species, it is clear that he based his description and the name on the manuscript notes of Greville. Greville had originally referred this species of *Cosmiodiscus*.

14. **C. oblongus** Grev. in *Trans. microsc. Soc. Lond.* **14**: 4, figs 9, 10 (1866). (Pl. 28, Figs 1–4; specimen diameter for Fig. 1, 82·5 μm, Fig. 2, 80·5 μm, Fig. 3, 83·5 μm, Fig. 4, 80·5 μm)
Barbadoes Springfield Estate BM 10192, *L.H.* 263, BM 10208 *L.H.* 262, isotypes.
The drawing in the Greville collection is marked 'Barbad. Springfield H(3)'. The two figures are from the above two slides. All the examples of this species in Greville's collection are annotated by Rattray and not identified to species by Greville. The Hardman slides have many selected individuals. The micrographs have been taken from BM 10192.
This species was transferred to *Craspedodiscus* by Hanna (1931) as *Craspedodiscus oblongus* (Grev.) Hanna, which is a later homonym of *Craspedodiscus oblongus* (Grev.) Grun. in A.

Schmidt (1881), based on *Porodiscus oblongus* Grev. Gombos (1982) recognized that Hanna's name was illegitimate and published the new name *Craspedodiscus ellipticus* Gombos for this species, erroneously calling it a comb. nov., not a nom. nov.

15. **C. patellaeformis** Grev. in *Trans. microsc. Soc. Lond.* **9**: 80, fig. 4 (1861). (Pl. 31, Fig. 10; specimen diameter 77·5 μm)
Barbadoes Earth, BM 2178, holotype.

16. **C. pulchellus** Grev. in *Trans. microsc. Soc. Lond.* **14**: 3, fig. 7 (1866). (Pl. 33, Fig. 1; specimen diameter 140 μm)
Barbadoes Cambridge Estate *Johnson* 1864, BM 3424, holotype.

17. **C. robustus** Grev. in *Trans. microsc. Soc. Lond.* **14**: 3, fig. 8 (1866). (Pl. 28, Fig. 5; specimen diameter 195 μm)
Monterey, BM 10831 *L.H.* no. 1073, holotype.
The protologue states that the specimens came from the 'cabinet of L. Hardman', hence the above slide is the holotype.

18. **C. scintillans** Grev. in *Q. Jl microsc. Sci.* II, **3**: 230, fig. 6 (1863).
'Barbadoes deposit, from Cambridge estate.' Slide not found.
The slides used for the description of this taxon came from Mr G. M. Browne. They have not been located.

19. **C. splendidus** Grev. in *Trans. microsc. Soc. Lond.* **13**: 44, fig. 3 (1865). (Pl. 33, Figs 2, 5, 6; specimen diameter 91·5 μm)
Barbadoes Cambridge Estate *Johnson* 1863, BM 3110, syntypes.
The slide above is that which Greville indicates on the drawing in the manuscript collection. There are two MF locations, 23/23, and 27/14. These have been identified as syntypes by Mr R. Ross. Specimen 27/14 has been used for the micrographs.

20. **C. symmetricus** Grev. in *Trans. microsc. Soc. Lond.* **9**: 68, fig. 2 (1861). (Pl. 34, Figs 6–8; specimen diameter 55 μm)
Barbadoes deposit, BM 2076, holotype.

21. **C. tuberculatus** Grev. in *Trans. microsc. Soc. Lond.* **9**: 42, fig. 6 (1861). (Pl. 34, Figs 1, 2; specimen diameter 55 μm)
Barbadoes deposit, BM 2063, BM 2069, BM 2082, syntypes.
These slides are syntypes. The micrographs have been taken from BM 2063 (MF 33/13). This species has recently been studied by Sims (in Fryxell, Sims & Watkins, 1986) and transferred to the genus *Azpeitia*.

XXII. *COSMIODISCUS* Grev.

Simonsen (1974) has suggested that the Greville species will probably be found to possess a pseudonodulus and thus belong in the Hemidiscaceae. The status of the genera in the Hemidiscaceae is uncertain and requires revision.

1. **C. barbadensis** Grev. in *Trans. microsc. Soc. Lond.* **14**: 80, fig. 12 (1866). (Pl. 34, Figs 3–5; specimen diameter 86·5 μm)
Cambridge Barbadoes *Johnson* 1864, BM 3027, holotype.

2. **C. elegans** Grev. in *Trans. microsc. Soc. Lond.* **14**: 79, fig. 13 (1866). (Pl. 33, Figs 3, 4; specimen diameter 90·5 μm)
Monterey deposit, BM 10221, *L.H.* no. 281.
See notes under *Coscinodiscus elegans*.

Rattay wanted to transfer this species to *Coscinodiscus*, but as *C. elegans* was preoccupied by Greville's earlier name, Rattray proposed a new name: *Coscinodiscus perikompsis* (Rattray 1890: 576*a*, pl. III, fig. 12).

3. **C. normanianus** Grev. in *Trans. microsc. Soc. Lond.* **14**: 80, fig. 11 (1866).

'Barbadoes deposit; cabinet of George Norman, Esq.' Slide not found.
The slide used by Greville for the published illustration of this species came from George Norman. Norman's slides have not been traced.

Rattray (1890) had wished to transfer this species into *Coscinodiscus* but considered the combination *Coscinodiscus normanianus* undesirable as the name was too similar to that of *Coscinodiscus normanii* Greg. in Grev. and hence he proposed a new name, *Coscinodiscus apages* Rattray. As pointed out by VanLandingham (1968: 860), Rattray's reasons are inadequate. Furthermore, *Coscinodiscus normanii* has been transferred to *Actinocyclus* (Hustedt, 1957: 218). Rattray does not list a Greville specimen in his protologue.

Greville erroneously referred his specimen to *Coscinodiscus* in the caption to the figure.

XXIII. *CRASPEDODISCUS* Ehrenb.

1. **C. umbonatus** Grev. in *Trans. microsc. Soc. Lond.* **14**: 79, fig. 15 (1866). (Pl. 33, Fig. 7; specimen diameter 85 μm)
Barbadoes 1865, BM 3469, holotype.

XXIV. *CRASPEDOPORUS* Grev.

This genus has recently been revised by Hendey & Sims (1987), including a re-evaluation of the Greville species.

1. **C. johnsonianus** Grev. in *Trans. microsc. Soc. Lond.* **11**: 69, fig. 10 (1863). (Illustrated in Hendey & Sims, 1987: 32, fig. 35)
Cambridge Estate Barbadoes *Johnson*, BM 2769, holotype.

2. **C. ralfsianus** Grev. in *Trans. microsc. Soc. Lond.* **11**: 68, fig. 9 (1863). (Pl. 34, Fig. 9; specimen diameter 92·5 μm)
Cambridge Estate Barbadoes *Johnson* 1863, BM 2742, lectotype.
A drawing is present in the Greville manuscript collection but no details given of the slide used for the illustration. A series of manuscript notes state that Greville consulted a Ralfs' slide. This slide has not been traced. Hendey & Sims (1987) have designated BM 2742 as lectotype.

XXV. *CRESWELLIA* Arn. ex Grev.

1. **C. annulata** Grev. in *Ann. Mag. nat. Hist.* III, **16**: 4, fig. 8 (1865). (Pl. 34, Figs 10, 11; specimen diameter 26·5 μm)
Hong Kong Harbour 14, BM 4511, holotype?
In the protologue Greville indicates that he had seen several specimens: 'I have repeatedly seen two in connexion and have at the present moment a chain of three under my eye.' The above specimen is therefore considered the holotype. The mountant of the slide is of poor quality and hence the micrographs are not of considerable use.

2. **C. barbadensis** Grev. in *Trans. microsc. Soc. Lond.* **13**: 3, fig. 11 (1865). (Pl. 35, Figs 1, 2; specimen length 45 μm)
Cambridge Estate Barbadoes *Johnson*, BM 3190, BM 3248; Barbadoes 1864, BM 3163; Barbadoes 1864, BM 3457; Barbadoes, 1865, BM 3245, lectotype.
There is a drawing in the Greville manuscript collection but with no annotations. Greville states that he had seen many specimens, but none of the above slides match the published illustration. It is possible Greville may have composed his illustration from all the valves he examined.

3. **C. cylindracea** Grev. in *Trans. microsc. Soc. Lond.* **13**: 3, fig. 10 (1865).
Hong Kong Harbour *J. L. Palmer* 1863, BM 3229.
The specimen Greville chose to illustrate is one with four linked frustules. The above slide is the only one labelled for this species. However, no specimen has been located at the given MF number.

4. **C? ferox** Grev. in *Q. Jl microsc. Sci.* **7**: 166, figs 15, 16 (1859). (Pl. 35, Figs 3, 4; specimen diameter 48·5 μm)
Californ. Guano *J. T. Norman* 8.58, BM 1772, BM 1779; Californ. Guano BM 1777, BM 1782.
As Greville gave two figures of this species, the originals of both are syntypes. Figure 15 is of two frustules, and figure 16 is a single valve. Greville states: 'I have only twice had an opportunity of examining them in connexion'. BM 1782 is marked '*Creswellia ferox* (united)', but is of two valves. The other slides are of single girdle views.

5. **C. minuta** Grev. in *Trans. microsc. Soc. Lond.* **13**: 4, fig. 13 (1865). (Pl. 35, Fig. 5; specimen length 15·5 μm)
Barbadoes *Johnson* 1864, BM 3185, holotype.
This slide is of poor quality and hence only low magnification micrographs are possible.

6. **C. palmeriana** Grev. in *Trans. microsc. Soc. Lond.* **13**: 2, fig. 9 (1865). (Pl. 35, Figs 7, 8; specimen diameter 57·5 μm)
[Hong Kong Habour *J. L. Palmer*] 12, BM 3232; Shark's Bay west coast of Australia in Ascidians *Dr MacDonald*, BM 1948.
There is a drawing in the Greville manuscript collection but it is not annotated with a slide number. The best example of this species was, according to Greville, on a L. Hardman slide. This slide has not been traced. Two localities were given in the protologue. The first of the two slides given above has no locality details on the slide label. However, from information on neighbouring slides and comparison with the species composition, it is probably from Hong Kong. Greville indicated on the label that this species was present. The second slide corresponds to the Shark's Bay locality but the label is not annotated for this species. The Shark's Bay material is of valve and girdle views.

7. **C. rudis** Grev. in *Trans. microsc. Soc. Lond.* **14**: 78, fig. 7 (1866). (Pl. 35, Fig. 6; specimen diameter 97·5 μm)
Monterey Earth *L. Hardman* 1865, BM 3352, BM 3232, syntypes.
The drawing in the Greville manuscript collection is annotated with two numbers: '[BM] 3352' and 'Monterey 54H'. The Hardman slide is of a girdle view. Due to the state of BM 3352 and the condition of the mountant, the specimen is difficult to photograph and little detail is revealed. Micrographs have been taken from BM 3232.

8. **C. sphaerica** Grev. in *Trans. microsc. Soc. Lond.* **13**: 4, fig. 12 (1865).
Cambridge Barbadoes, *Johnson* 1862, BM 2821, holotype?
Greville illustrates a specimen with several inter-connected frustules: 'Although very rare, I have seen, at least, a score of specimens, but only a single example of frustules in connexion.' The above slide purportedly corresponds to the drawing and must be considered as the holotype. However, no specimen was found.

9. **C. superba** Grev. in *Trans. microsc. Soc. Lond.* **9**: 68, figs 3–5 (1861). (BM 2022, Pl. 36, Figs 1, 2; specimen diameter 108·5 μm; BM 2015 (MF 28/14), Pl. 36, Fig. 3; specimen diameter 60·5 μm)
Barbadoes deposit, BM 2015, BM 2022, syntypes.
In the Greville manuscript collections there are three drawings, each of which corresponds to a published figure. The drawings are annotated with two slide numbers. BM 2015 has two MF locations, 16/32 and 28/14, which correspond to figures 3 (not illustrated) and 4 respectively. BM 2022 has a single specimen marked at 31/28 and is also annotated by Greville as 'large', which corresponds to figure 5. These must be considered syntypes.

10. **C. turgida** Grev. in *Q. Jl microsc. Sci.* **7**: 165, fig. 14 (1859). (Pl. 36, Figs 4–6; specimen diameter 38·5 μm)
Californ. Guano, BM 1777, lectotype.
There are many slides in the Greville collection that could be the holotype for this species but without manuscript evidence it is impossible to decide. BM 1777 was selected as lectotype as the specimen is a whole frustule.

11. **C. turris** Grev. & Arn. in Greg. in *Trans. R. Soc. Edinb.* **21**: 538, pl. 14, fig. 109 (1857). (Pl. 36, Fig. 9; specimen diameter 55·5 μm, specimen length 210 μm)
Teignmouth *Arnott*, from Ascidians, BM 47; Teignmouth *Arnott*, 1857, BM 1057; Ascidia, Cumbrae *Arnott* (740), BM 2268, syntypes.
Greville gave two localities in the protologue for this species. However, the illustration is of four interlocked frustules which corresponds to the specimen on BM 47. Greville states: 'Island of Cumbrae, where it was dredged with the nests of *Lima hians* by Mr Hennedy, and a single frustule detected by Dr Walker-Arnott.' BM 2268 is the slide of Walker-Arnott's single frustule.

XXVI. *CYMATOPLEURA* W. Sm.

1. **C. angulata** Grev. in *Trans. microsc. Soc. Lond.* **10**: 89, fig. 1 (1862). (Pl. 37, Fig. 9; specimen length 82·5 μm)
Patos guano 8.58 *J. T. Norman*, BM 1756, lectotype, BM 1757; Californ. guano, BM 1765, BM 1777.

XXVII. *CYMBELLA* Agardh

1. **C. lindsayana** Grev. in *Trans. bot. Soc. Edinb.* **8**: 234, figs 5–8 (1866). (Pl. 36, Figs 7, 8; specimen length 40 μm)
Otago New Zeald. *Dr. Lauder Lindsay*, 1861 (15), BM 3549, syntypes.
The drawing in the Greville manuscript collection is not annotated. This is the only slide in the collection that corresponds to the locality data given and hence must be considered type material. There are two MF location annotations on the slide label but no indication as to which species they refer. Both co-ordinates reveal specimens of *C. lindsayana*. MF 25/24 has been used for the micrograph. Lindsay (1865) published a detailed account of the collecting sites for these New Zealand diatoms. This species was included in his checklist as a *nom. nud.*, indicating that Greville was to describe them later.

XXVIII. *DIATOMA* Bory

1. **D. brachygonium** Grev. in Hook., *Brit. Fl.* **5**: 406 (1833).
[Appin], Marine, *Captain Carmichael*.
This species has not been traced in the Greville herbarium.

XXIX. *DIATOMELLA* Grev.

A recent revision of this genus has revealed much about the submicroscopic details of its valve and girdle morphology. *D. balfouriana*, the type of the genus, was not studied (LeCohu, 1983).

1. **D. balfouriana** Grev. in *Ann. Mag. nat. Hist.* II, **15**: 259, figs 10–13 (1855); in *Trans. bot. Soc. Edinb.* **5**: 51, pl. IV, figs 10–13 (1855). (Pl. 37, Figs 1, 2; specimen length 22·5 μm)
Glen Callater, 8.54 (127), BM 561; Braemer *Balfour* 9.54, BM 563; Glen Tilt, 8.55, BM 726, syntypes.
Several localities are noted in the protologue. All the above slides are syntypes. This species was originally named, but not published, by W. Smith as *Grammatophora balfouriana*. The micrographs are of a ringed specimen on BM 563.

XXX. *DICLADIA* Ehrenb.

Ross & Sims (1985) studied Greville's species and showed that they belong to the genus *Dicladiopsis* De Toni. They also showed that *D. robusta* Grev. is a synonym of *D. barbadensis* Grev.

1. **D? barbadensis** Grev. in *Trans. microsc. Soc. Lond.* **13**: 56, fig. 28 (1865). (Pl. 37, Fig. 3; specimen length 130 μm)
Cambridge Estate Barbadoes *Johnson* 1864, BM 3416, holotype.

Three figures from the type slide are given in Ross & Sims (1985). Plate 31, fig. a is the holotype specimen, while figs b and c are additional specimens from the holotype slide.

2. **D? robusta** Grev. in *Trans. microsc. Soc. Lond.* **13**: 98, fig. 11 (1865). (Pl. 37, Fig. 6; specimen length 122·5 μm)
Barbadoes *Johnson* 1864, BM 3179, holotype.

XXXI. *DICTYOPYXIS* Ehrenb.

1. **D. brevis** Grev. in *Trans. microsc. Soc. Lond.* **10**: 22, fig. 2 (1862). (Pl. 37, Figs 4, 5; specimen length 40·5 μm)
Ceylon *Dr Macrae*, BM 2390, lectotype; Andaman Islds *Dr Macrae* 1861, BM 2434.
The published illustration is of two frustules plus a detached valve. Neither of the above slides has such an arrangement. Greville states that he had only seen two examples of this taxon. These may be the above slides. BM 2434 is of several united frustules but does not match those given in the drawing.

XXXII. *ECHINELLA* Agardh

1. **E. circularis** Grev. in *Trans. Wernerian Soc.* **4**: 213, pl. 8, fig. 2 (1822).
Rivulet near Dumbryden Quarries, 1820, BM 81187.
The slide is made from material that is on permanent loan from Kew. It is stored dried on to mica and mounted in envelopes on to herbarium sheets. The slide was made from a small portion of this material. This species has been studied in detail by Williams (1985: 158–172).

2. **E. fasciculata** [β] **truncata** Grev. in *Scott. Crypt. Fl.* **1**: pl. 16, fig. 4 (1822).
'Aquae dulcis. On various *Confervae* and on all aquatic plants about Edinburgh, March 1821, leg *Greville*', BM 81237, BM 81238, BM 81250.
These slides have been made from material that is on permanent loan from Kew. The valves have fragmented and no whole specimens were found.

XXXIII. *ENTOGONIA* Grev.

This genus has been recently studied in detail by Holmes & Brigger (1977, 1979) who, along with Bergon (1892*a*, *b*), had access to the Greville types. Many of the species Greville described under *Triceratium* are now placed in this genus.

1. **E. amabilis** Grev. in *Q. Jl microsc. Sci.* II, **3**: 236, fig. 21 (1863). (Pl. 37, Fig. 7; distance across one side 96·5 μm)
Cambridge Barbadoes *Johnson* 1863, BM 2874, holotype.
There is a drawing in the Greville manuscript collection annotated with the above slide number. The specimen is found at MF 25/21. However, the glass of the slide is thick and does not allow high magnification to be used.

2. **E. conspicua** Grev. in *Q. Jl microsc. Sci.* II, **3**: 236, fig. 23 (1863).
'Barbadoes deposit, from Cambridge estate; G. Norman, Esq.'
There is a drawing in the Greville collection which is annotated with 'no. 15, Norman'. There is no slide in Greville's collection that corresponds to this particular number. Additionally, there are no slides in the Greville collection indexed for this species. The only slide in the BM of this species is in the Hardman collection. No lectotype has been designated until it is certain that the Norman slides cannot be found.

3. **E. elegans** Grev. in *Trans. microsc. Soc. Lond.* **13**: 33, fig. 19 (1865).
'Barbadoes deposit, Cambridge estate; C. Johnson, Esq.'
There are no slides in the Greville collection indexed for this taxon. Bergon (1892*b*) reported the absence of the type. It is yet to be found.

4. **E. punctulata** Grev. in *Q. Jl microsc. Sci.* II, **3**: 237, fig. 24 (1863).
'Barbadoes deposit, from Cambridge estate; G. Norman, Esq.'
There is a drawing in the Greville collection which is annotated with 'Norman'. There is no slide of this species in the Greville collection. The only slide in the BM of this species is in the Hardman collection. No lectotype has been designated until it is certain that the Norman slides cannot be found.

5. **E. reticulata** Grev. in *Trans. microsc. Soc. Lond.* **12**: 85, fig. 5 (1864). (Pl. 37, Fig. 8; distance across one side 82·5 μm)
Cambridge Barbadoes *Johnson* July 1863, BM 2901, holotype.
The specimen is at an acute angle on the slide, presenting difficulty for accurate photography.

6. **E. venulosa** Grev. in *Q. Jl microsc. Sci.* II, **3**: 236, fig. 22 (1863).
'Barbadoes deposit, from Cambridge estate; G. Norman, Esq.'
There is a drawing in the Greville collection which is annotated with 'Norman, no. 14'. There is no slide in the Greville collection that corresponds to this particular number. Additionally, there are no slides in the Greville collection indexed for this species. The slide prepared by Meakin, BM 36179 from Joes River, Barbados, has been chosen as neotype. See also Barker & Meakin (1944: 19) and Holmes & Brigger (1979: 194).

XXXIV. *EUODIA* J. W. Bail. ex Ralfs

1. **E. barbadensis** Grev. in *Trans. microsc. Soc. Lond.* **9**: 69, figs 6, 7 (1861). (Pl. 37, Fig. 10; specimen length 30·5 μm)
Barbadoes deposit, BM 2075, BM 2081, syntypes.
The drawing in the Greville manuscript collection corresponding to figure 6 is BM 2075 (MF 18/14, illustrated). The specimen in figure 7 corresponds to BM 2081 (MF 15/39). These specimens are therefore syntypes.

XXXV. *EUPODISCUS* Ehrenb.

1. **E. barbadensis** Grev. in *Trans. microsc. Soc. Lond.* **12**: 88, fig. 4 (1864). (Pl. 38, Fig. 1; specimen diameter 55·5 μm)
Barbadoes *Johnson* 1865, BM 3104, holotype.

2. **E. hardmanianus** Grev. in *Trans. microsc. Soc. Lond.* **14**: 80, fig. 14 (1866). (Pl. 38, Figs 2, 3; specimen diameter 127·5 μm)
From shell cleanings So. America *L. Hardman* 1866, BM 3492, holotype?
A drawing is available in the Greville manuscript collection but no slide details are given. There is only one slide in Greville's collection.

3. **E. jonesianus** Grev. in *Trans. microsc. Soc. Lond.* **10**: 22, fig. 3 (1862). (Pl. 38, Figs 4–6; specimen diameter 153·5 μm)
[Guano Unknown locality] *Dr Macrae*, BM 2389, holotype?
A drawing is available in the Greville manuscript collection but no slide details are given. There is only one slide in Greville's collection.

4. **E. minutus** Grev. in *Trans. microsc. Soc. Lond.* **14**: 5, fig. 13 (1866).
'Barbadoes deposit, Springfield estate; cabinet of L. Hardman, Esq.'
The drawing in the Greville manuscript collection is annotated 'Barb. Springfield H(4)' referring to a Hardman slide. A footnote in Rattray (1888*a*: 911) states: 'I am informed by Mr. Hardman that the original of the species is lost, the slide on which it was mounted having been broken in the Post Office.' There is no appropriate neotype in the collection and such a designation should properly await a revision of the species.

5. **E. obscurus** Grev. in *Trans. microsc. Soc. Lond.* **10**: 90, fig. 4 (1862).
'Cape of Good Hope; Dr. Macrae.'
This slide has not been found, nor is it in Greville's collection.

6. **E. oculatus** Grev. in *Trans. microsc. Soc. Lond.* **10**: 90, fig. 3 (1862).
Monterey Stone *Johnson* 1862, BM 2623 (MF 24/15); Monterey Stone *Johnson* (*Arnott*), BM 3015.
In the protologue Greville cites George Norman and Fred R. Kitton as sources of the material. However, material from these sources is not present in the Greville collection. The two slides, indicated above, are the only ones which purport to have examples of this taxon. The specimen on BM 2623 (MF 24/15) does not appear to be close to that which Greville illustrated and is marked as '*Eupodiscus ocellatus* Grev.' and may have originally been intended as a different species. A lectotype has not been designated until this specimen can be studied further.

7. **E. parvulus** Grev. ex Rattray in *Trans. R. microsc. Soc.* **1888**: 912, pl. 14, fig. 8 (1888). (Pl. 38, Figs 7, 8; specimen diameter 52·5 μm)
Barbadoes, *Johnson*, BM 2751, lectotype; Barbadoes deposit, *Johnson*, BM 2769; Barbadoes, *Johnson*, 1862, BM 2756, BM 2771, BM 2794, BM 2826; Cambridge, Barbadoes, *Johnson*, 1862, BM 2753, BM 2774, BM 2784, BM 2816, BM 2825; Cambridge, Barbadoes, *Johnson*, 1863, BM 2873, BM 3057, BM 3102; Cambridge, Barbadoes, *Johnson*, 1864, BM 3420; Barbadoes, *Johnson*, 1865, BM 3449; Barbadoes, 1865, BM 2451.

8. **E. punctulatus** Grev. in *Trans. microsc. Soc. Lond.* **11**: 73, fig. 19 (1863). (Pl. 38, Fig. 10; specimen diameter 77·5 μm)
Cambridge Barbadoes *Johnson* 1863, BM 2752, holotype.

9. **E. scaber** Grev. in *Trans. microsc. Soc. Lond.* **12**: 81, fig. 1 (1864). (Pl. 38, Fig. 11; specimen diameter 180·5 μm)
Barbadoes *Johnson* 1863, BM 2943, holotype?
There is a drawing in the Greville manuscript collection but no details of the slide used are given. The slide above is the only one in the collection of this species from the type locality.

10. **E. simplex** Grev. in *Trans. microsc. Soc. Lond.* **11**: 73, fig. 20 (1863). (Pl. 38, Fig. 9; specimen diameter 90·5 μm)
Cambridge Barbadoes *Johnson* 1862, BM 2770, holotype.

11. **E. trioculatus** Grev. in *Trans. microsc. Soc. Lond.* **12**: 88, fig. 3 (1864). (Pl. 39, Fig. 1; specimen diameter 77 μm)
Cambridge Estate Barbadoes *Johnson* 1863, BM 3050, BM 3047, BM 3048.
A drawing in the Greville collection is annotated with the above three slide numbers but no reference to MF locations. Greville also states that: 'three specimens, of which I have before me'. These three must be considered syntypes. However, BM 3050 is a poor slide and BM 3047 is catalogued as missing.

XXXVI. *EXILARIA* Grev.

1. **E. fulgens** Grev. in *Scott. Crypt. Fl.* **5**: pl. 291, figs 1, 2 (1827).
'On various small algæ in the sea, in spring and summer. Appin, Captain Carmichael.'
No material is present in BM.

XXXVII. *FENESTRELLA* Grev.

A revision, with an expanded generic description, is given in Swatman (1948). Swatman examined Greville's type slide, but did not include micrographs of Greville's material in his paper.

1. **F. barbadensis** Grev. in *Trans. microsc. Soc. Lond.* **11**: 68, fig. 8 (1863). (Pl. 39, Fig. 2; specimen diameter 108 μm)
Barbadoes *Johnson* 1863, BM 2813, holotype.

XXXVIII. *GEPHYRIA* Arn.

1. **G. constricta** Grev. in *Trans. microsc. Soc. Lond.* **14**: 77, fig. 2 (1866). (Pl. 39, Fig. 3; specimen length 163 μm)
Monterey deposit *L. H.* no. 336, BM 10266, holotype.

2. **G. gigantea** Grev. in *Trans. microsc. Soc. Lond.* **14**: 122, figs 7, 8 (1866).
Monterey *L. Hardman*, BM 3360, holotype?
The two published illustrations are present in Greville's manuscript collection but there are no annotations indicating the slides from which they were taken. In a set of manuscript notes there are further comments: 'F.V. lower valve no. Upper Valve no. 76.' This may refer to a Hardman slide. BM 3360 is a Hardman slide but it is in Greville's own collection. The valve does not resemble either of the published figures.

XXXIX. *GLYPHODESMIS* Grev.

1. **G. eximia** Grev. in *Q. Jl microsc. Sci.* II, **2**: 235, figs 7–10 (1862). (Pl. 39, Figs 10, 11; specimen length 35 μm)
Jamaica in washings of small algae, BM 1708; Nassau *Norman*, BM 1741, syntypes.
In the protologue Greville states: 'my drawings of this species from the West Indian specimens.' These two slides are considered syntype material. This species has been studied in detail by Sullivan (in press).

XL. *GLYPHODISCUS* Grev.

1. **G. stellatus** Grev. in *Trans. microsc. Soc. Lond.* **10**: 91, fig. 5 (1862). (Pl. 39, Figs 4, 5; specimen diameter 28·5 μm)
Monterey Stone, *Kitton*, BM 3542, BM 3543, BM 3586; Monterey Stone, BM 2575, BM 3158, BM 3588, BM 3589, BM 3590, syntypes.
There are many examples of this taxon in the Greville collection. Greville states: 'The most perfect example which I have seen, and which I have represented, is in Mr. George Norman's cabinet.' It is not clear whether Greville retained this slide and where, if he did not, Norman's slide is. It is not in the BM. The above slides are syntypes. The micrograph is taken from BM 3542.

This species has been examined recently in LM by Bone (1969) and in the SEM by Stidolph (1985).

XLI. *GONIOTHECIUM* Ehrenb.

1. **G. prolongatum** Grev. in *Trans. microsc. Soc. Lond.* **13**: 56, fig. 29 (1865). (Pl. 39, Figs 6, 7)
Barbadoes *Johnson* 1864, BM 3415, syntypes.
The slide above indicates two specimens, either of which could be the holotype. It is difficult to tell them apart and hence both are regarded as syntypes (Pl. 39, Fig. 6, MF 16/20, specimen length 107·5 μm; Pl. 39, Fig. 7, MF 17/26, specimen length 95 μm).

XLII. *GRAMMATOPHORA* Ehrenb.

1. **G. moronensis** Grev. in *Q. Jl microsc. Sci.* II, **3**: 229, fig. 5 (1863). (Pl. 39, Fig. 9; specimen length 52·5 μm)
Moron deposit Spain 1862, BM 2905, holotype.

2. **G. pusilla** Grev. in *Trans. bot. Soc. Edinb.* **7**: 574, fig. 15 (1863); in *Edinb. New phil. J.* **18**: 181, fig. 15 (1863). (Pl. 39, Fig. 8; specimen length 37·5 μm)
Curteis Straits Queensland *Dr Roberts* 1863, BM 2598, lectotype, BM 2624.
There is a drawing of this species in the Greville manuscript collection but no slide numbers are indicated. The illustration Greville published is of two frustules. Neither of the above slides correspond exactly to the drawings, which may have been part of the entire range of valves Greville studied.

XLIII. *HEIBERGIA* Grev.

1. **H. barbadensis** Grev. in *Trans. microsc. Soc. Lond.* **13**: 100, figs 8–9 (1865). (BM 3102, Pl. 40, Figs 1, 2; specimen length 135·5 μm; BM 2773, Pl. 40, Fig. 3; specimen length 97·5 μm)
Barbadoes 1865, BM 3102; Cambridge Barbadoes *Johnson* 1862, BM 2773, syntypes.
The drawings in the Greville manuscript collection are annotated with two slide numbers. BM 3102 (MF 27/13) is probably figure 9 and BM 2773 (MF 32/15) is probably figure 8.

XLIV. *HELIOPELTA* Ehrenb.

1. **H. nitida** Grev. in *Trans. microsc. Soc. Lond.* **14**: 5, fig. 18 (1866). (Pl. 40, Figs 4, 5; specimen diameter 79 μm)
Los Angeles deposit California *L. Hardman* 1865, BM 3239, holotype?
There is a drawing in Greville's manuscript collection but no details are given of the slide number. This is the only slide in Greville's collection that has specimens of *H. nitida*. There is a group of four arranged amongst other selected species.

XLV. *HEMIAULUS* Heiberg, nom. cons. prop.

Greville included several species in *Hemiaulus* temporarily, recognizing that they should be placed elsewhere, possibly in new genera. In particular, *H. tenuicornis, H. lyriformis, H. longicornis, H. alatus, H. hastatus, H. ornithocephalus,* and *H. capitatus* were dealt with in this way. Recently Ross & Sims (1985) removed the latter two species, placing them in a new genus, *Briggera* R. Ross & P. A. Sims. The remaining Greville species were initially transferred into *Reidelia* Jousé & Sheshukova-Poretskaya by Schrader & Fenner (1976). However, there is continued confusion over the exact identity of *Reidelia*, and these species remain, at present, in *Hemiaulus*.

1. **H. alatus** Grev. in *Trans. microsc. Soc. Lond.* **13**: 31, fig. 14 (1865). (Pl. 40, Fig. 6; specimen length 38·5 μm, height from base to tips, 48·5 μm)
Barbadoes *Johnson* 1865, BM 3439.
There is only one slide in the collection referable to this species, but no MF location is provided. However, a specimen was discovered at MF 17/21.

2. **H. angustus** Grev. in *Trans. microsc. Soc. Lond.* **13**: 30, fig. 12 (1865). (Pl. 40, Figs 7–9; specimen length 30·5 μm, height from base to tips, 117·5 μm)
Barbadoes *Johnson* 1864, BM 3426 lectotype, BM 3427; Barbadoes, 1865, BM 3105.

3. **H?? capitatus** Grev. in *Trans. microsc. Soc. Lond.* **13**: 54, fig. 24 (1865). (Pl. 40, Figs 11, 12; specimen length 37·5 μm, height from base to tips, 35 μm)
Barbadoes *Johnson* 1864, BM 3426, holotype.
For a full discussion of this species and its relationships see Ross (1972) and Ross & Sims (1985: 303–305).

4. **H. chinensis** Grev. in *Ann. Mag. nat. Hist.* III, **16**: 5, fig. 9 (1865). (Pl. 41, Fig. 10; specimen length 27·5 μm, height from base to tips, 32·5 μm)
Hong Kong Harbour 9, BM 4506, syntypes.
The drawing in the Greville manuscript collection is of three specimens. One is a single frustule without a girdle, the second is a single frustule with an expanded girdle, and the third, the one Greville published, is of two entire frustules. There is no indication from which slide the published illustration was taken. These specimens are considered syntypes.

5. **H. crenatus** Grev. in *Trans. microsc. Soc. Lond.* **13**: 101, fig. 12 (1865).
Cambridge, Barbadoes, BM 3444, holotype.
It is impossible to photograph the type specimen as the coverslip has become completely detached from the slide. Any attempt to remount the coverslip will certainly move the specimen from its original MF co-ordinates.

6. **H. exiguus** Grev. in *Trans. microsc. Soc. Lond.* **13**: 29, fig. 20 (1865). (Pl. 41, Figs 1, 2; specimen length 26·5 μm)
Barbadoes *Johnson* 1863, BM 3057; Barbadoes *Johnson* 1864, BM 3128, holotype?
BM 3057 has only a single valve, whereas there is an entire frustule on BM 3128. It is possible that the latter specimen is the holotype.

7. **H. hastatus** Grev. in *Trans. microsc. Soc. Lond.* **13**: 31, fig. 15 (1865). (Pl. 41, Fig. 3; specimen length 62 μm, height from base to tips, 98·5 μm)
Barbadoes 1864, BM 3036, BM 3044, lectotype; Barbadoes *Johnson* 1864, BM 3037; Barbadoes *Johnson* 1865, BM 3449; Barbadoes 1865, BM 3460.
Fenner (1982) transferred *H. hastata* to *Odontella* but the combination is invalid as it appeared in an unpublished Ph. D dissertation. A valid transfer appears in the appendix.

8. **H. lobatus** Grev. in *Trans. microsc. Soc. Lond.* **13**: 29, fig. 9 (1865). (Not illustrated)
Barbadoes *Johnson* 1864, BM 3420; Cambridge Barbadoes 1865, BM 3448.

9. **H. longicornis** Grev. in *Trans. microsc. Soc. Lond.* **13**: 31, fig. 13 (1865). (Pl. 40, Fig. 10; specimen length 44·5 μm, height from base to tips, 127·5 μm)
Barbadoes 1865, BM 3115, holotype? BM 3469; Cambridge Barbadoes *Johnson* 1863, BM 3055; Barbadoes *Johnson* 1864, BM 3266, BM 3272; [Barbadoes *Johnson* 1864], BM 3409; Barbadoes Cambridge estate, BM 3443; Cambridge Barbadoes 1865, BM 3444; Barbadoes *Johnson* 1865, BM 3449.
There is a drawing in Greville's manuscript collection which is labelled *Monogramma ventricosa*, but this name has since been crossed out. The drawing is identical to that published as *H. longicornis* and the slide number, given as BM 3115, specimen MF 15/22, is probably the holotype.

10. **H. lyriformis** Grev. in *Trans. microsc. Soc. Lond.* **13**: 30, figs 11, 21 (1865). (Pl. 41, Fig. 4; specimen length 33 μm, height from base to tips, 55·5 μm)
Barbadoes 1865, BM 3105, lectotype, BM 3264; [Barbadoes *Johnson* 1864], BM 3409; Barbadoes *Johnson* 1864, BM 3421; Barbadoes *Johnson* 1865, BM 3439, BM 3440; Cambridge Barbadoes 1865, BM 3444.

11. **H. minutus** Grev. in *Trans. microsc. Soc. Lond.* **13**: 101, fig. 5 (1865).
Cambridge Barbadoes 1865, BM 3444.
It is impossible to photograph the type specimen as the coverslip has become completely detached from the slide. Any attempt to remount the coverslip will certainly move the specimen away from its MF co-ordinates.

12. **H. mucronatus** Grev. in *Trans. microsc. Soc. Lond.* **13**: 28, fig. 6 (1865). (Pl. 41, Figs 5–7; specimen length 52·5 μm, height from base to tips, 35 μm)
Barbadoes *Johnson* 1864, BM 3266, lectotype, BM 3282, BM 3429; Cambridge Barbadoes *Johnson* 1865, BM 3274, BM 3412; Barbadoes Cambridge Estate *Johnson*, BM 3410; Barbadoes *Johnson* 1865, BM 3415; Barbadoes Cambridge estate *Johnson* 1864, BM 3416, BM 3419; Cambridge Barbadoes 1865, BM 3442.

13. **H. ornithocephalus** Grev. in *Trans. microsc. Soc. Lond.* **13**: 32, fig. 16 (1865). (Pl. 41, Figs 8, 9; specimen length 37·5 μm, height from base to tips, 15 μm)
Barbadoes 1865, BM 3263, holotype.
There is no drawing in Greville's manuscript collection. However, this is the only specimen present in Greville's slide collection and is considered the holotype by Ross (1972: 335) and Ross & Sims (1985: 310).

14. **H. pulvinatus** Grev. in *Trans. microsc. Soc. Lond.* **13**: 28, fig. 8 (1865). (Pl. 42, Figs 1, 4; specimen length 53 μm, height from base to tips, 32·5 μm)
Barbadoes *Johnson* 1864, BM 3255, holotype.

15. **H. punctatus** Grev. in *Trans. microsc. Soc. Lond.* **13**: 28, fig. 7 (1865).
'Barbadoes deposit, Cambridge estate; in slides communicated by C. Johnson, Esq.'

There is no slide in the Greville collection of this taxon. The type slide has not been traced.

16. **H. reticulatus** Grev. in *Trans. microsc. Soc. Lond.* **13**: 27, fig. 5 (1865).
'Barbadoes deposit, Cambridge estate; in slides communicated by C. Johnson, Esq.'
There is no slide in the Greville collection of this taxon. The type slide has not been traced.

17. **H?? robustus** Grev. in *Trans. microsc. Soc. Lond.* **13**: 54, fig. 23 (1865). (Pl. 42, Fig. 2; specimen length 38 μm, height from base to tips, 72·5 μm)
Barbadoes Cambridge Estate *Johnson* 1864, BM 3422, holotype.
This slide is badly damaged and gives extremely poor micrographs.

18. **H. symmetricus** Grev. in *Trans. microsc. Soc. Lond.* **13**: 53, fig. 22 (1865). (Pl. 42, Figs 6, 7; specimen length 90 μm, height from base to tips, 30 μm)
Barbadoes *Johnson* 1864, BM 3282, holotype.
The drawing in the Greville collection was incorrectly annotated. The holotype specimen has been found on the above slide. According to Mr R. Ross, careful examination of the type specimen shows that it is a broken specimen of a tripolar *Trinacria* sp.

19. **H. tenuicornis** Grev. in *Trans. microsc. Soc. Lond.* **13**: 29, fig. 10 (1865). (Pl. 43, Figs 1, 2; specimen length 60 μm, height from base to tips, 80 μm)
Barbadoes 1865, BM 3264, lectotype, BM 3280; Barbadoes, *Johnson*, 1864, BM 3285.
There is no drawing for this species in the Greville manuscript collection.

XLVI. *HETERODICTYON* Grev.

1. **H. rylandsianum** Grev. in *Trans. microsc. Soc. Lond.* **11**: 66, fig. 6 (1863). (Pl. 42, Figs 3, 5; specimen diameter 102·5 μm)
Barbadoes *Johnson* 1862, BM 2771, holotype.

2. **H. splendidum** Grev. in *Trans. microsc. Soc. Lond.* **11**: 66, fig. 7 (1863). (Pl. 42, Fig. 8; specimen diameter 42·5 μm)
Barbadoes *Johnson* 1853 [sic, 1863], BM 2820, holotype.

XLVII. *LIRADISCUS* Grev.

1. **L. barbadensis** Grev. in *Trans. microsc. Soc. Lond.* **13**: 5, fig. 14 (1865). (Pl. 42, Fig. 9; specimen diameter 60 μm)
Barbadoes *Johnson* 1864, BM 3179, holotype.

2. **L. ellipticus** Grev. in *Trans. microsc. Soc. Lond.* **13**: 99, fig. 6 (1865). (Pl. 42, Fig. 10; specimen diameter 73 μm)
Cambridge Barbadoes *Johnson* 1865, BM 3274, holotype.
Two specimens are indicated on the slide. The specimen at MF location 32/18 is indicated as holotype on Greville's drawing.

3. **L. minutus** Grev. in *Trans. microsc. Soc. Lond.* **13**: 47, fig. 6 (1865). (Pl. 43, Fig. 3; specimen length 17·5 μm)
Barbadoes *Johnson* 1864, BM 3281, BM 3275, syntypes.
The published figure is of three separate drawings. In the Greville manuscript collection two drawings remain. BM 3275 has a single specimen (MF 32/21, Greville's figure 6, lower-most valve; illustrated) and BM 3281 has two specimens, MF 33/22 (Greville's figure 6, uppermost valve) and MF 19/21 (Greville's figure 6, middle valve). The drawing with two valves has BM 3295 added, but clearly in error, whilst the other drawing denotes only one MF number.

4. **L. ovalis** Grev. in *Trans. microsc. Soc. Lond.* **13**: 5, figs 15, 16 (1865). (Pl. 43, Fig. 4; specimen diameter 47·5 μm)
Cambridge Barbadoes *Johnson* 1864, BM 3181, BM 3182, syntypes.
Greville illustrates two specimens and both figures are present in the Greville manuscript collection. The valve view is annotated with slide numbers BM 3181 and BM 3182, whilst the

girdle view is without a slide reference. Each slide has several specimens. The micrographs are from BM 3182.

XLVIII. *MASTOGLOIA* Thw. ex W. Sm.

1. **M. capitata** Grev. in *Q. Jl microsc. Sci.* II, **2**: 235, figs 11, 12 (1862). (Pl. 43, Figs 5, 6, 9; specimen length 32·5 μm)
Tank Calcutta *Dr Macrae* 1861, BM 2563, BM 2564, syntypes.
There are only two slides in the collection that correspond to the type locality and specimens are abundant on each slide.

2. **M. macdonaldii** Grev. in *Trans. bot. Soc. Edinb.* **8**: 237, fig. 15 (1866).
'Shark's Bay, Australia, in stomachs of Ascidians. Dr Macdonald.'
There is a drawing in the Greville manuscript collection which indicates that the slide belonged to Mr Norman. The drawing is annotated with: 'Shark's Bay. Norman's Slide. 810. 28/35'. This is clearly a reference to the holotype specimen, but is has not been located in the collections at BM.

3. **M. minuta** Grev. in *Q. Jl microsc. Sci.* **5**: 12, fig. 10 (1857). (Pl. 43, Figs 7, 8; specimen length 28·5 μm)
Trinidad *Mrs Eccles* 9.55, BM 995; Trinidad 1856, BM 1002, syntypes.
Greville stated that he had examined numerous frustules.

XLIX. *MELOSIRA* Agardh

1. **M. costata** Grev. in *Trans. microsc. Soc. Lond.* **14**: 77, figs 3–6 (1866). (Pl. 44, Figs 1, 2; valve width, 11 μm, frustule length 24·5 μm)
Hong Kong, BM 4501, BM 53909, syntypes.
Hasle (1973) made an extensive study of this species. She used material from Hong Kong (BM 53909) for her study, which was also from J. Linton Palmer's original gathering. The additional locality from Yorkshire, which Greville received from G. Norman, has not been traced.

2. **M. nobilis** Grev. in *Trans. bot. Soc. Edinb.* **8**: 233, fig. 2 (1866). (Pl. 43, Figs 10, 11; specimen width 75 μm, frustule length 82·5 μm)
New Caledonia *Dr Roberts*, BM 2661, holotype.
Only two specimens are indicated in the collection, both of which are on the same slide. The micrographs are from the specimen that Greville illustrated. The other specimen is of two linked frustules.

3. **M. setosa** Grev. in *Trans. bot. Soc. Edinb.* **8**: 436, figs 17–19 (1866). (Pl. 44, Figs 3, 4; frustule length 28·5 μm)
Aneitum New Hebrides, BM 3532, BM 3533, BM 3534, syntypes.

L. *MONOGRAMMA* Ehrenb.

1. **M. smithiana** Grev. in *Trans. bot. Soc. Edinb.* **8**: 440, figs 3–5 (1866). (Not illustrated)
Aneitum New Hebrides, BM 3532, BM 3533, BM 3534, syntypes.

LI. *NAVICULA* Bory

1. **N. approximata** Grev. in *Edinb. New phil. J.* **10**: 28, fig. 4 (1859); in *Trans. bot. Soc. Edinb.* **6**: 247, fig. 4 (1859). (Pl. 44, Fig. 15; specimen length 82·5 μm)
Californ. Guano, BM 1765, BM 1774, lectotype, BM 1775; Californ. Guano, *J. T. Norman*, BM 1767; Californ. Guano, *J. T. Norman* 1858, BM 1773; [Californ. Guano], BM 1776.
There is a single drawing in the Greville manuscript collection which is annotated with two numbers: 21(5) and 22 (2). Neither of these numbers are traceable on slides.

2. **N. californica** Grev. in *Edinb. New phil. J.* **10**: 29, fig. 5 (1859); in *Trans. bot. Soc. Edinb.* **6**: 248, fig. 5 (1859). (Pl. 44, Figs 13, 14; specimen length 115 μm)
So. African Guano, BM 1859, holotype?; Patos guano, BM 1766.

Greville states in the protologue: 'an individual from South African Guano now before me', suggesting that the specimen on BM 1859 was used for the published illustration.

3. **N? cistella** Grev. in *Trans. microsc. Soc. Lond.* **11**: 19, figs 12–14 (1863). (Pl. 44, Fig. 5; specimen length 28 μm; Pl. 44, Fig. 6; specimen length 29·5 μm)
Harvey Bay, BM 2665, BM 2669; Harvey Bay *Dr Roberts* 1862, BM 2676, BM 2677, BM 2678, BM 2679; Dredged in 8 fath. Lyme Regis, *Roper*, BM 2704, syntypes.
Greville illustrated this species with three drawings. Figures 13 and 14, the valve views, are missing from the Greville manuscript collection, but figure 12, a girdle view, is present. However, no slide information is given. Greville gives the following localities in the protologue: 'Dredged off Lyme Regis, in eight fathoms' water by the Rev. J. Guillemard, 1855; F. C. S. Roper, Esq. Harvey Bay, Queensland, in dredging communicated by Dr. Roberts, of Sydney; not infrequent.' Greville's description is apparently based on the Harvey Bay material. Figure 12 is likely to be that of Roper's material as in the protologue Greville states that only Roper had seen a girdle view. However, BM 2704, of Roper's material, has only valve view specimens.

4. **N. compacta** Grev. in *Q. Jl microsc. Sci.* **5**: 11, fig. 8 (1857). (Pl. 44, Fig. 10; specimen length 32·5 μm)
Trinidad *Mrs Eccles*, 9.55, BM 995 holotype.
This is the only slide in the Greville collection that has a specimen identified by Greville.

5. **N. diversa** Grev. in *Trans. bot. Soc. Edinb.* **7**: 579, fig. 14 (1863); in *Edinb. New phil. J.* **18**: 186, fig. 14 (1863). (Pl. 44, Figs 8, 9; specimen length 55 μm)
Curteis Straits Queensland *Dr Roberts* 1862, BM 2640, holotype.

6. **N. egyptiaca** Grev. in *Trans. microsc. Soc. Lond.* **14**: 127, figs 16, 17 (1866). (Pl. 44, Figs 7, 11, 12, 16; specimen length 131 μm)
Stomach of Holothurians Alexandria *Norman* 1866, BM 3000, lectotype.
A drawing in the Greville manuscript collection is annotated with 'Holothuria Alexandria'. The drawing is of three specimens, one in valve view and two in girdle view. One of the girdle view illustrations was not published. This specimen is given in Fig. 7. The additional slides Greville received from W. J. Baker have not been located. The above slide is the only one in the collection for this species and it is designated as lectotype.

7. **N. excavata** Grev. in *Trans. microsc. Soc. Lond.* **14**: 130, fig. 15 (1866).
'Red Sea; cabinet of Laurence Hardman, Esq.'
There is some confusion as to the source of the type illustration. The drawing in the Greville manuscript collection is annotated as 'H. Monterey 65' yet the locality given in the protologue is the Red Sea. There is also a set of manuscript notes annotated for Monterey. All the slides in the Greville collection and the Hardman slides (Deby collection) from the Red Sea have specimens of *N. rimosa*. However, two slides are purported to have specimens of *N. excavata*, from Santa Monica (BM 10284) and Los Angeles (BM 10290). There are no slides from Monterey that indicate *N. excavata*.

8. **N. forcipata** Grev. in *Q. Jl microsc. Sci.* **7**: 83, figs 10, 11 (1859). (Pl. 45, Fig. 1; specimen length 74·5 μm)
Creswell *Donkin*, BM 1522, lectotype; Arran 1857, BM 1450, BM 1473, BM 1475, BM 1557, BM 1560; Arran, BM 2231; Californ. Guano, BM 1783, BM 1810, BM 1824; Californ. Guano *J. T. Norman* 1858, BM 1797; Glenshire, BM 3295.
Greville gave several localities in the protologue for this species, including: Glenshira, Lamlash Bay, Creswell, and Californian guano. All these are represented in the collection and have been listed above. However, Greville also noted: 'The Northumberland examples are the finest which have come to my notice. Those from the Clyde are, for the most part, much smaller – many of them even minute – thus exhibiting a range size as extensive as in *N. lyra* and its allies.' Therefore I have chosen as lectotype the Northumberland slide.

9. **N. gemmata** Grev. in *Edinb. New phil. J.* **10**: 30, fig. 7 (1859); in *Trans. bot. Soc. Edinb.* **6**: 249, fig. 7 (1859). (Pl. 45, Figs 2, 3; specimen length 120 μm)

Patos guano, 8.58, *J. T. Norman*, BM 1755 (specimen illustrated), BM 1757, BM 1771; Californ. guano, *J. T. Norman*, BM 1764, BM 1794, BM 1815.

10. **N. gregoriana** Grev. in *Q. Jl microsc. Sci.* **5**: 10, fig. 7 (1857).
Trinidad, Mrs William Eccles.
All the slides in the Greville collection with specimens of this taxon are from localities other than the type: BM 1670 and BM 1732 from Jamaica and BM 1749 from shell scrapings, Nassau, W. Indies. The type slide has not been located.

11. **N. indica** Grev. in *Trans. microsc. Soc. Lond.* **10**: 95, fig. 13 (1862). (Pl. 45, Figs 4–6; specimen length 112·5 μm)
Ind. Oc. *Macrae* 1861, BM 2417, holotype.

12. **N. irrorata** Grev. in *Edinb. New phil. J.* **10**: 27, pl. IV, fig. 1 (1859); in *Trans. bot. Soc. Edinb.* **6**: 246, fig. 1 (1859). (Pl. 45, Figs 7, 8; specimen length 100 μm)
Californ. Guano, BM 1775, BM 1782, BM 1810, BM 1811 (specimen illustrated); Californ. Guano *J. T. Norman*, BM 1767, BM 1794; Californ. Guano *J. T. Norman* 58, BM 1806; Californ. Guano *J. T. Norman* 8.58, BM 1820, BM 1779; Californ. Guano *J. T. Norman* 9.58, BM 1768, BM 1769.
The drawing is missing from the Greville manuscript collection and there is no indication of which slide Greville used for his drawing.

13. **N. jamaicensis** Grev. in *Trans. microsc. Soc. Lond.* **14**: 126, fig. 23 (1866). (Pl. 45, Figs 9, 10; specimen length 80 μm)
Washed from shells from Aneitum, New Hebrides, BM 1692, holotype?
Greville gives Jamaica as the type locality but the only slide listed in Greville's collection is from Aneitum, New Hebrides. On this slide a fractured specimen is present at the MF number Greville noted on the manuscript drawing where Aneitum has been crossed out and replaced with Jamaica. Examination of the strewn slide has shown that the species composition is identical to the others from Aneitum.

14. **N. johnsoniana** Grev. in *Trans. microsc. Soc. Lond.* **11**: 17, fig. 8 (1863). (Pl. 46, Figs 1, 2; specimen length 92·5 μm)
Harvey Bay, Queensland, BM 2673, holotype?; N. Zealand 1859 *Johnson*, BM 2568.
The drawing is missing from the Greville manuscript collection. Greville gives two localities in the protologue: New Zealand, C. Johnson and Harvey Bay, Dr Roberts. However, Greville states in the protologue: 'I had prepared drawings of both forms; but not having room in the plate for both, I have given the Australian . . .'

15. **N. lewisiana** Grev. in *Trans. microsc. Soc. Lond.* **11**: 15, fig. 7 (1863). (Pl. 46, Figs 3, 5, 6; specimen length 182 μm)
Sierra Leone *F. Kitton*, R321, BM 3898; Sierra Leone, *Kitton*, BM 1892 (MF 24/25, illustrated).
Greville gives several localities in the protologue but only the above slides are catalogued for this species.

16. **N. luxuriosa** Grev. in *Trans. microsc. Soc. Lond.* **11**: 18, figs 10, 11 (1863).
'Port Stephen, New South Wales, in a dredging communicated by Dr. Roberts.'
Both of the published illustrations are in the Greville manuscript collection. The card with the original drawings is annotated 'Port Stephen 3' and has two MF locations, 21/21 and 25/12. This slide has not been located.

17. **N. lyra** var. **recta** Grev. in *Edinb. New phil. J.* **10**: 28, pl. IV, fig. 3 (1859); in *Trans. bot. Soc. Edinb.* **6**: 247, fig. 3 (1859). (Pl. 46, Figs 11, 12; specimen length 170 μm)
Patos guano, 8.58, *J. T. Norman*, BM 1756, holotype?
The slide label is annotated with *N. lyra* var. *princeps*, a name Greville never published. Instead, Greville published this taxon as var. *recta*, of which the above slide is probably the holotype. Additionally, Greville states that he has only seen two examples. There are two adjacent specimens on the slide.

18. **N. notabilis** Grev. in *Trans. microsc. Soc. Lond.* **11**: 18, fig. 9 (1863). (Pl. 46, Fig. 4; specimen length 87·5 μm)
Cook's Reef Torres Strait *G. Norman* (381) 1862, BM 2622, lectotype.
Four specimens are indicated on the slide label. It is impossible to establish which of these Greville used for his illustration. The specimen at MF 13/14 has been used for the micrographs.

19. **N. nummularia** Grev. in *Edinb. New phil. J.* **10**: 29, fig. 6 (1859); in *Trans. bot. Soc. Edinb.* **6**: 249, fig. 6 (1859). (Pl. 46, Fig. 7; specimen length 32·5 μm)
Californ. guano *J. T. Norman*, 9.58, BM 1769, BM 1773; Californ. guano 58, BM 1798, lectotype.

20. **N. polysticta** Grev. in *Edinb. New phil. J.* **10**: 28, fig. 12 (1859); in *Trans. bot. Soc. Edinb.* **6**: 247, fig. 2 (1859). (Pl. 46, Figs 8, 9; specimen length 50 μm)
Californ. guano, BM 1775, holotype?

21. **N. rimosa** Grev. in *Trans. microsc. Soc. Lond.* **14**: 129, fig. 25 (1866). (Pl. 47, Figs 1–3; specimen length 140 μm)
Red Sea Dredgings [*L. Hardman*], BM 3982, syntypes.

22. **N. robertsiana** Grev. in *Trans. bot. Soc. Edinb.* **8**: 235, fig. 9 (1866). (Pl. 46, Fig. 10; specimen length 167·5 μm)
New Caledonia 1862, BM 2766, holotype.

23. **N. spectalissima** Grev. in *Trans. microsc. Soc. Lond.* **14**: 84, fig. 29 (1866). (Pl. 47, Figs 4, 5; specimen length 62·5 μm)
Zanzibar *Prof. H. L. Smith*, 65, BM 3553, holotype.
There is no drawing of this species and only one slide in the Greville collection. This is of a partial valve.

24. **N. strangulata** Grev. in *Trans. microsc. Soc. Lond.* **14**: 126, fig. 24 (1866).
'In marine dredgings, Nassau, West Indies.'
There is a drawing in the Greville manuscript collection but it is not annotated with a slide number. There are no slides labelled for this species. The type slides have yet to be discovered.

25. **N. sulcata** Grev. in *Trans. bot. Soc. Edinb.* **8**: 235, fig. 10 (1866). (Pl. 47, Figs 6, 7; specimen length 40 μm)
New Caledonia *Dr Roberts* 1862, BM 2655, holotype.

26. **N. zanzibarica** Grev. in *Trans. microsc. Soc. Lond.* **14**: 129, fig. 28 (1866). (Pl. 48, Fig. 1; specimen length 185 μm)
Zanzibar *Prof. H. L. Smith*, 1865, BM 3556.
A set of manuscript notes indicates that Greville used two slides annotated as follows: 'no. 4 H. Smith and no. 11'. The above slide is isotype material. Neither of these numbers corresponds to slides in Greville's collection.

LII. *ODONTODISCUS* Ehrenb.

1. **O. barbadensis** Grev. in *Trans. bot. Soc. Edinb.* **8**: 436, fig. 16 (1866). (Pl. 47, Fig. 8; specimen diameter 55 μm)
Barbadoes *Johnson* 1866, BM 3509, holotype.

LIII. *OMPHALOPELTA* Ehrenb.

1. **O. moronensis** Grev. in *Trans. microsc. Soc. Lond.* **14**: 122, fig. 14 (1866). (Pl. 48, Figs 8, 9; specimen diameter 57·5 μm)
Moron *L. H.* no. 462, BM 10371, holotype.

LIV. *OMPHALOPSIS* Grev.

1. **O. australis** Grev. in *Trans. bot. Soc. Edinb.* **7**: 537, figs 10, 11 (1863); in *Edinb. New phil. J.* **18**: 36, figs 10, 11 (1863). (Pl. 48, Fig. 2; specimen diameter 52·5 μm)
[Woodlark Islands *Dr Roberts*], BM 2714, syntypes.
The drawing in the Greville manuscript collection is annotated with '[BM] 2714'. The slide label has no identifications or locality given; it has been left blank. There are two specimens on the slide, MF 28/19, which corresponds to figure 10 (not illustrated) and MF 21/24, which corresponds to figure 11 (illustrated).

LV. *PALMERIA* Grev.

1. **P. hardmaniana** Grev. in *Ann. Mag. nat. Hist.* III, **16**: 2, figs 1–4 (1866). (Pl. 48, Figs 4–6; specimen diameter 485 μm)
Hong Kong Harbour, BM 2998, BM 4721, syntypes.
Stosch (1986) has recently studied this genus and given an enlarged description of both the genus and species. He examined Greville's type material.

LVI. *PEPONIA* Grev.

1. **P. barbadensis** Grev. in *Trans. microsc. Soc. Lond.* **11**: 76, fig. 25 (1863). (Pl. 48, Fig. 7; specimen diameter 72·5 μm)
Bridgewater Barbadoes *Johnson* 1863, BM 2739, holotype.

LVII. *PINNULARIA* Ehrenb.

1. **P. hartleyana** Grev. in *Trans. microsc. Soc. Lond.* **13**: 57, fig. 30 (1865). (Pl. 48, Fig. 3; specimen length 245 μm, width 27·5 μm)
Cavalla Liberia *Rev. B. Hartley*, 1864, BM 3374, syntype.
This is the only slide in the collection from the type locality. There are two specimens marked on the slide with MF locations: 26/29 and 35/28. The latter has been used for the photograph.

LVIII. *PLAGIOGRAMMA* Grev.

1. **P? angulatum** Grev. in *Trans. microsc. Soc. Lond.* **14**: 121, fig. 3 (1866). (Pl. 49, Figs 1–3; specimen length 95 μm)
Cambridge Barbadoes *Johnson* 1862, BM 2758, holotype.

2. **P. atomus** Grev. in *Trans. bot. Soc. Edinb.* **7**: 536, fig. 9 (1863); in *Edinb. New phil. J.* **18**: 36, fig. 9 (1863). (Pl. 49, Figs 4, 5; specimen length 20·5 μm)
[Woodlark Island *Dr Roberts*], BM 2714, holotype.

3. **P. barbadense** Grev. in *Trans. microsc. Soc. Lond.* **14**: 1, fig. 3 (1866).
Cambridge Barbadoes 1865, BM 3444, holotype.
This is a badly damaged slide making it impossible to photograph the type specimen. Several alternative slides are available for neotype specimens: BM 3187, BM 3254, BM 3419, BM 3447.

4. **P. californicum** Grev. in *Q. Jl microsc. Sci.* **7**: 211, figs 15–17 (1859). (Pl. 49, Fig. 9; specimen length 55 μm, Pl. 49, Fig. 10, specimen length, 60 μm)
Californ. guano, BM 1790; Californ. guano *Arnott*, (S. 599), BM 1793; Californ. guano BM 1795; [Californ. guano], BM 1776.
It is possible to match specimens on the slides to the published illustrations. BM 1790 is a fragment and possibly that of figure 15; either BM 1793 or BM 1795 (Pl. 49, Fig. 9) could be the specimen in figure 17; and BM 1776 is possibly that of figure 16. In any case, these are all syntype specimens.

5. **P. constrictum** Grev. in *Trans. bot. Soc. Edinb.* **7**: 536, fig. 8 (1863); in *Edinb. New phil. J.* **18**: 36, fig. 8 (1863). (Pl. 49, Figs 6, 7; specimen length 52·5 μm)
New Caledonia, BM 2643, holotype.

6. **P. costatum** Grev. in *Trans. bot. Soc. Edinb.* **7**: 535, figs 5, 6 (1863); in *Edinb. New phil. J.* **18**: 35, figs 5, 6 (1863). (Pl. 49, Fig. 8; specimen length 43·5 μm)
New Caledonia *Dr Roberts*, 1862, BM 2646, syntypes.
The drawing in Greville's manuscript collection indicates only one slide and a single MF location (25/12). This specimen is illustrated by Greville's figure 6. The slide has eight other specimens. As the original description referred to two figures, the above must be considered syntypes.

7. **P. decussatum** Grev. in *Trans. microsc. Soc. Lond.* **14**: 1, fig. 1–2 (1866). (Not illustrated)
St. Helena *Wallich*, 1862, BM 2579; Zanzibar *Prof. H. L. Smith* 65, BM 3553; Zanzibar *Prof. H. L. Smith*, 65, BM 3562.
A drawing is present in the Greville manuscript collections but there is no reference to which specimen it was taken from. Greville states: 'The discovery of this species is due to Dr. Wallich, in whose notes and sketches it is clearly indicated.' BM 3553 and BM 3562 are of valve views whilst the girdle view is that of BM 2579. These are all syntypes. The micrographs have been taken from BM 3553.

8. **P. elongatum** Grev. in *Trans. microsc. Soc. Lond.* **14**: 121, figs 1, 2 (1866). (Pl. 49, Fig. 11; specimen length 167·5 μm)
From shell cleanings So. America *L. Hardman*, 1866, BM 3490; Shell cleanings, So. America, BM 3491.
There is a drawing in the Greville manuscript collection but without annotations. BM 3490 is a selected slide with one valve view specimen and BM 3491 is a group of selected valves with a portion of *P. elongatum* in girdle view. Additionally, there is a label on 3490 which says 'Dr Greville, from L. Hardman!'

9. **P. inaequale** Grev. in *Q. Jl microsc. Sci.* **7**: 210, fig. 10 (1859). (Pl. 50, Figs 1–3; specimen length 40 μm)
Jamaica, BM 1712; Nassau, 59, BM 1736.
Greville states that the valve view is unknown. Two localities are given in the protologue, hence these slides are syntypes. The micrographs have been taken from BM 1736.

10. **P. jamaicense** Grev. in *Q. Jl microsc. Sci.* **7**: 208, fig. 3 (1859). (Pl. 49, Figs 12, 13; specimen length 38 μm)
Jamaica 58, BM 1705, BM 1706, syntypes.
The micrographs have been taken from BM 1705.

11. **P. lyratum** Grev. in *Q. Jl microsc. Sci.* **7**: 211, fig. 14 (1859). (Pl. 50, Figs 4, 5; specimen length 67·5 μm)
Shell scrapings Nassau W. Ind. *Norman*, BM 1730, holotype.
Greville states: 'I have only met with one example', hence this is probably the holotype. The specimen is only a fragment and the slide is such that only low magnification is possible.

12. **P. obesum** Grev. in *Q. Jl microsc. Sci.* **7**: 211, figs 12, 13 (1859). (Pl. 50, Fig. 10; specimen length 45 μm)
Shell scrapings Nassau *Norman*, BM 1731, lectotype; Nassau, BM 1737; Nassau W. Ind., BM 1740, BM 1744.

13. **P. orientale** Grev. in *Trans. microsc. Soc. Lond.* **14**: 77, fig. 1 (1866). (Pl. 50, Figs 8, 11; specimen length 25·5 μm)
Zanzibar *Prof. H. L. Smith* 65, BM 3553, holotype.
There is a drawing in the Greville manuscript collection but without annotations. The species is referred to as *P. africana* in Greville's manuscript notes. The notes indicate which slide Greville used for the illustration.

14. **P. ornatum** Grev. in *Q. Jl microsc. Sci.* **7**: 209, fig. 9 (1859). (Pl. 50, Fig. 9; specimen length 112·5 μm)
Californ. Guano *Arnott* (S. 599), BM 1760, holotype?

15. **P. pulchellum** Grev. in *Q. Jl microsc. Sci.* **7**: 209, figs 4–6 (1859). (Pl. 50, Fig. 6; specimen length 55 μm)
Californ. guano 58 *Norman*, BM 1759; Californ. guano, BM 1785, BM 1787; Patos guano 58, BM 1758, syntypes.
Greville published three drawings for this species, noting that he has 'seen as many as five frustules united in a chain'. BM 1759 is figure 5; BM 1785 is figure 6; and BM 1787 is figure 4 (illustrated).

16. **P. pygmaeum** Grev. in *Q. Jl microsc. Sci.* **7**: 211, fig. 11 (1859). (Pl. 51, Figs 1, 6; specimen length 25 μm)
Shell scrapings Nassau, BM 1735 holotype?

17. **P. robertsianum** Grev. in *Trans. microsc. Soc. Lond.* **11**: 13, figs 1, 2 (1863).
'Port Stephen, New South Wales; Dr. Roberts.'
There are neither manuscript notes nor slides of this species in the Greville collection.

18. **P. spectabile** Grev. in *Edinb. New phil. J.* **18**: 35, fig. 7 (1863); in *Trans. bot. Soc. Edinb.* **7**: 536, fig. 7, (1863). (Pl. 51, Fig. 2; specimen length 48 μm)
New Caledonia *Dr Roberts*, 1862, BM 2645, BM 2652.
Greville notes that 'of this diatom I have only seen two examples'. In the Greville manuscript collection there is a drawing with the two numbers. However, there appear to be several specimens on each slide. The drawing indicates BM 2652 (MF 32/22), but this specimen is only a fragment. Additionally, BM 2645 (MF 33/35) is indicated, which corresponds to an entire valve. The latter specimen has been used for the micrographs.

19. **P? tessellatum** Grev. in *Q. Jl microsc. Sci.* **7**: 208, fig. 7 (1859). (Pl. 50, Fig. 7; specimen length 80 μm)
Californ. Guano, BM 1789, holotype.

20. **P. validum** Grev. in *Q. Jl microsc. Sci.* **7**: 209, fig. 8 (1859). (Pl. 51, Figs 3, 4; specimen length 110·5 μm)
Californ. guano *J. T. Norman*, BM 1794, lectotype; Californ. guano *J. T. Norman* 58, BM 1825; Californ. guano *Arn.* s. 599, BM 1826.
Greville states in the protologue: 'I have only seen the side view [valve view] of this diatom'. BM 1794 has a specimen in valve view and is therefore probably the holotype.

21. **P. wallichianum** Grev. in *Trans. microsc. Soc. Lond.* **13**: 1, figs 7, 8 (1865). (Pl. 51, Fig. 5; specimen length 26 μm; Pl. 51, Fig. 7; specimen length, 37·5 μm)
St. Helena *Wallich*, (7), 1857, BM 3228; St. Helena, 1857, *Wallich*, (9), BM 3955; St. Helena, *Wallich* (14), BM 3939.
The drawings in the Greville manuscript collection are of the published figures 7 and 8. Figure 7 is annotated with 'no. 7, 15/29', corresponding to BM 3228, with an additional annotation to an alternative valve view, 'St. Hel. 14, 24/32'. Figure 8 is annotated 'n.9, 20/21', which is the specimen on BM 3955.

LIX. *PLEUROSIGMA* W. Sm.

1. **P. compactum** Grev. in *Q. Jl microsc. Sci.* **5**: 12, fig. 9 (1857). (Pl. 51, Figs 8–10; specimen length 117·5 μm)
Trinidad *Mrs Eccles*, BM 993, holotype.
In a note Cox (1983: 579) made concerning the species, she suggests affinities with either *Rhoicosigma* Grun. or *Donkinia* Ralfs. As authentic material has now been discovered, this can be clarified.

LX. *PORODISCUS* Grev.

1. **P. concinus** Grev. in *Trans. microsc. Soc. Lond.* **11**: 65, fig. 3 (1863). (Pl. 52, Figs 1–3; specimen diameter 41 μm, frustule length 77·5 μm)
Cambridge Barbadoes *Johnson* 1862, BM 2812, holotype.

2. **P. elegans** Grev. in *Trans. microsc. Soc. Lond.* **11**: 64, fig. 1 (1863). (Pl. 52, Fig. 4; specimen diameter 40 μm)
Bridgewater Barbadoes *Johnson*, BM 2745, holotype.

3. **P. major** Grev. in *Trans. microsc. Soc. Lond.* **11**: 64, fig. 2 (1863). (Pl. 52, Figs 5, 6; specimen diameter 95 μm, central area, 17·5 μm)
Cambridge Barbadoes 1863, BM 2844, holotype?
The description of this species was later amended by Greville (1865*c*: 46).

4. **P. nitidus** Grev. in *Trans. microsc. Soc. Lond.* **11**: 65, fig. 4 (1863). (Pl. 52, Figs 7, 8; specimen diameter 45 μm)
Barbadoes *Johnson*, BM 2751, holotype?; Cambridge Barbadoes *Johnson* 1863, BM 2744.
The drawing in the Greville manuscript collection is annotated with respect to two slides as the source of the holotype: BM 2751 (MF 24/32) and BM 2744 (MF 26/31). From an examination of these two specimens it is more likely that BM 2751 was used for the published illustration because the specimen on BM 2744 is a partial valve.

5. **P. oblongus** Grev. in *Trans. microsc. Soc. Lond.* **11**: 65, fig. 5 (1863). (Pl. 53, Figs 2, 3, 5; specimen diameter 55 μm)
Barbadoes earth, BM 2045, holotype?
This species is referred to as *P. ovalis* on both the slide label and the published plate legend.

6. **P. splendidus** Grev. in *Trans. microsc. Soc. Lond.* **13**: 46, fig. 5 (1865). (Pl. 52, Fig. 9; specimen diameter 35 μm)
Barbadoes deposit, Springfield Estate, *L. H.* no. 505, BM 10399; Barbadoes, (*L. H.* no. 714), BM 10602, lectotype, (*L. H.* no. 715), BM 10603, (*L. H.* no. 716), BM 10604, (*L. H.* no. 717), BM 10605.
Some of Hardman's slides are labelled confirming Greville's identifications. BM 10603 is marked 'Greville no. 10', BM 10604 as 'Named by Greville no. 19', and BM 10605 as 'Named by Greville no. 17'. The drawing of this species in the Greville manuscript collection is marked 'H. 3 Barbadoes' and does not relate to any of the above slides Greville identified for Hardman.

LXI. *PORPEIA* J. W Bail. ex Ralfs

1. **P. ornata** Grev. in *Trans. microsc. Soc. Lond.* **13**: 53, fig. 21 (1865). (Pl. 51, Figs 11, 12; specimen length 73·5 μm)
Barbadoes *Johnson* 1864, BM 3285, holotype.

2. **P. quadrata** Grev. in *Trans. microsc. Soc. Lond.* **13**: 53, fig. 20 (1865). (Pl. 53, Fig. 1; specimen length 85 μm)
Cambridge Barbadoes *Johnson* 1864, BM 3124, holotype.

LXII. *PYXILLA* Grev.

The separation of *Pyrgupyxis* Hendey from *Pyxilla* Grev., on the basis of the presence or absence of the attachment scars, is now open to some dispute and the relationship *Pyxilla* has with other similar species is still under investigation (see Hendey, 1969; Simonsen, 1979: 22; Gombos, 1983 and Gombos & Ciesielski, 1983).

1. **P. barbadensis** Grev. in *Trans. microsc. Soc. Lond.* **13**: 2, fig. 5 (1865). (Pl. 53, Fig. 7; specimen length 61 μm)
Barbadoes 1865, BM 3108, holotype.
There are two slides in Greville's collection and a drawing of the published figure in the Greville manuscript collection which refer to this species. The drawing indicates that BM 3108 was used for the published figure. Hendey (1969) erroneously used the alternative slide, BM 3037. However, both are from the type locality, and BM 3037 is a paratype specimen. Simonsen (1979: 22) used BM 3037 for his discussion of this genus.

2. **P. johnsoniana** Grev. in *Trans. microsc. Soc. Lond.* **13**: 2, fig. 6 (1865). (Pl. 53, Fig. 6; specimen length 52·5 μm)
Barbadoes *Johnson* 1862, BM 2771, holotype.

LXIII. *RHIZOSOLENIA* Ehrenb.

1. **R. striata** Grev. in *Trans. bot. Soc. Edinb.* **8**: 234, fig. 4 (1865).
Shark's Bay, west coast of Australia, in stomachs of Ascidians, *Dr MacDonald*, Norman 808, (slide not found).
The drawing in the Greville manuscript collection is annotated '808 Norman'. This slide has not been located. Sundstrom has designated BM 1948 as lectotype (Sundstrom, 1986: 84, fig. 209).

LXIV. *RUTILARIA* Grev.

A brief description of the genus has been given in Ross (1976). His study is partly based on SEM observations. A monographic revision is underway (Ross, in prep.).

1. **R. elliptica** Grev. in *Q. Jl microsc. Sci.* II, **3**: 229, fig. 3 (1863). (Pl. 53, Fig. 4; specimen length 90 μm)
Barbadoes *Johnson* 1862, BM 2756, holotype.
Greville illustrated this specimen in a further publication (1866*d*: figs 9, 10). These were produced from specimens on BM 2789 (MF 11/29; figure 9) and BM 3434 (MF 15/20; figure 10).

2. **R. epsilon** Grev. in *Q. Jl microsc. Sci.* II, **3**: 228, fig. 1 (1863). (Pl. 53, Fig. 10; specimen length 162·5 μm)
Monterey Earth *Johnson*, 1864, BM 3376.
Although there is a drawing in the Greville manuscript collection, there is no indication which slide was used for the description and figure. This slide cannot be traced nor can any others mounted before the name was published. Mr R. Ross has suggested that BM 3376, from the original locality, could be chosen as a suitable neotype.

3. **R. obesa** Grev. ex Cleve in *K. svenska VetensAkad. Handl.* **18** (5): 19 (1881). (Pl. 53, Figs 8, 9; specimen length 150 μm)
Monterey *L. H.* no. 514, BM 10407, holotype.
In the Greville manuscript collection the drawing of this species refers to a Hardman slide, 'H. Monterey'. This slide has been identified as BM 10407 by Mr R. Ross.

4. **R. superba** Grev. in *Trans. microsc. Soc. Lond.* **14**: 125, figs 11, 12 (1866). (Pl. 53, Fig. 11; specimen length 118 μm)
Barbadoes *Johnson*, 1864, BM 3427, BM 2761.
The originals of Greville's two figures are both syntypes. Both drawings are extant, with BM 2761 of figure 11 and BM 3427 of figure 12.

5. **R. ventricosa** Grev. in *Q. Jl microsc. Sci.* II, **3**: 228, fig. 2 (1863).
Barbadoes *Johnson* 1862, BM 2765; Cambridge Barbadoes *Johnson* 1862, BM 2775, BM 2799, BM 2801; Barbadoes, BM 66928.
The drawing in the Greville manuscript collection is annotated with 'Ralfs'. The only relevant slide in Ralfs' collection is BM 66928. This may be the holotype.

LXV. *RYLANDSIA* Grev.

1. **R. biradiata** Grev. in *Trans. microsc. Soc. Lond.* **9**: 68, fig. 1 (1861). (Pl. 54, Fig. 1; specimen diameter 53 μm)
Barbadoes deposit, BM 2064, BM 2073, BM 2074, BM 2077, BM 2108, BM 2109; Barbadoes, BM 2105; Barbadoes deposit *Ralfs*, BM 2145, lectotype.
There is a drawing in the Greville manuscript collection but no indication to the slide used in the description and figure. As the protologue states that the material came from Ralfs, BM 2145 has been designated lectotype.

LXVI. *SKELETONEMA* Grev.

1. **S. barbadense** Grev. in *Trans. microsc. Soc. Lond.* **13**: 43, fig. 1 (1865). (Pl. 54, Figs 8, 9; valve diameter 25 μm, specimen length, 82·5 μm)
Barbadoes *Johnson* 1864, BM 3059, holotype.

LXVII. *SPATANGIDIUM* Bréb.

1. **S. ralfsianum** G. Norman ex Grev. in *Q. Jl microsc. Sci.* **7**: 161, figs 7, 8 (1859). (Pl. 55, Figs 1–3; specimen diameter 82·5 μm)
Californ. guano 58, BM 1798, BM 1823, BM 1824; Californ. guano, *Norman*, 58, BM 1759, lectotype; Californ. Guano, *J. T. Norman*, 9.58, BM 1769, BM 1773; Bolivian guano, BM 1721, BM 1726.
The protologue gives two localities for this species, both of which are represented above.

LXVIII. *STAURONEIS* Ehrenb.

1. **S. apiculata** Grev. in *Edinb. New phil. J.* **10**: 30, fig. 8 (1859); in *Trans. bot. Soc. Edinb.* **6**: 249, fig. 8 (1860). (Pl. 54, Figs 2, 3; specimen length 45 μm)
Patos guano, 8.58, BM 1753.
There is a drawing in the Greville manuscript collection but no indication of which slide was used for the description and figure. This is the only slide in Greville's collection that corresponds to the locality data in the protologue.

2. **S. australis** Grev. in *Trans. bot. Soc. Edinb.* **7**: 579, fig. 13 (1863); in *Edinb. New phil. J.* **18**: 187, fig. 13 (1863). (Pl. 54, Fig. 7; specimen length 110 μm)
Harvey Bay *Dr. Roberts* 1862, BM 2678, holotype.

3. **S. decora** Grev. in *Trans. bot. Soc. Edinb.* **8**: 236, fig. 11 (1866). (Pl. 54, Fig. 4; specimen length 118·5 μm)
New Caledonia *Dr Roberts* 1862, BM 2663, holotype.

4. **S(?) obesa** Grev. in *Trans. bot. Soc. Edinb.* **8**: 237, fig. 12 (1866). (Pl. 54, Figs 5, 6; specimen length 43 μm)
[Curteis Straits Queensland *Dr Roberts*], BM 2736, holotype.

5. **S. rotundata** Grev. in *Trans. microsc. Soc. Lond.* **14**: 85, figs 30, 31 (1866). (Pl. 55, Fig. 4; specimen length 73 μm)
New Zealand [*Dr Lauder Lindsay*], BM 4129.
The drawing in the Greville manuscript collection is annotated with 'no. 8'. Greville had made a series of slides from the New Zealand material with most not fully labelled. BM 4129 is no. 8 of the series and the specimens therein are considered syntypes.
This species was published by Lauder (1865: 134), prior to Greville, as a *nom. nud.*

6. **S. scaphulaeformis** Grev. in *Trans. microsc. Soc. Lond.* **14**: 86, fig. 32 (1866). (Not illustrated)
Otago New Zeal. *Dr Lindsay*, 1861 (15), BM 3549, holotype.
The drawing in the Greville manuscript collection is annotated 'no. 15, 13/25'. This corresponds with BM 3549 which is the holotype. However, no specimen was located at MF 13/25.
This species was published by Lauder (1865: 134), prior to Greville, as a *nom. nud.*

LXIX. *STICTODESMIS* Grev.

1. **S. australis** Grev. in *Trans. bot. Soc. Edinb.* **7**: 535, figs 1–4 (1863). (Pl. 55, Figs 5–7; specimen length 220 μm)
Harvey Bay Queensland *Dr Roberts*, 1863, BM 2642, lectotype, designated by Cox (1982: 149).
In a recent review of the genus *Climaconeis* Grun., Cox (1982) examined the type slides of *Stictodesmis australis* and designated BM 2642 as lectotype. However, she did not publish

illustrations from this slide. Her illustrations were a drawing of the specimen from BM 2665 and a LM from BM 3402.

LXX. *STICTODISCUS* Grev.

1. **S. buryanus** Grev. in *Trans. microsc. Soc. Lond.* **9**: 40, fig. 1 (1861). (Pl. 55, Fig. 9, Pl. 56, Fig. 1; specimen diameter 90 μm)
Trinidad deposit *Mrs Bury*, BM 2249, holotype.

2. **S. californicus** Grev. in *Trans. microsc. Soc. Lond.* **9**: 79, fig. 1 (1861). (Pl. 55, Fig. 8, Pl. 56, Fig. 2; specimen diameter 85 μm)
Monterey stone, BM 1971, holotype.

3. **S. hardmanianus** Grev. in *Trans. microsc. Soc. Lond.* **13**: 98, fig. 4 (1865). (Pl. 56, Fig. 4; specimen diameter 117 μm)
Monterey; *L. H.* no. 279, BM 10221, holotype?
The drawing in the Greville manuscript collection is annotated 'H. 49'. For further notes on this slide see under *Coscinodiscus elegans*.

4. **S. insignis** Grev. in *Trans. microsc. Soc. Lond.* **9**: 41, fig. 4 (1861). (Pl. 55, Fig. 10; specimen diameter 35 μm)
Barbadoes deposit, BM 2075, holotype.
The slide is made of thick glass and hence high magnification is impossible to use and detail is lost.

5. **S. johnsonianus** Grev. in *Trans. microsc. Soc. Lond.* **9**: 41, fig. 3 (1861). (Pl. 56, Fig. 3; specimen diameter 83 μm)
Trinidad deposit *Mrs Bury*, BM 2248, holotype.
The slide is made of thick glass and hence high magnification is impossible to use and detail is lost.

6. **S. kittonianus** Grev. in *Trans. microsc. Soc. Lond.* **9**: 79, figs 2, 3 (1861). (Not illustrated)
Nottingham deposit U.S., BM 2195; Richmond deposit U.S., *Kitton*, BM 2254, syntypes.
In the Greville manuscript drawings, a Kitton slide is indicated for the girdle view, fig. 3. This matches the specimen on slide BM 2254. Figure 2 is the specimen on BM 2195 (MF 30/35); the drawing for figure 3 is not annotated.

LXXI. *STRANGULONEMA* Grev.

1. **S. barbadense** Grev. in *Trans. microsc. Soc. Lond.* **13**: 44, fig. 2 (1865). (Pl. 56, Figs 5, 6; valve width 20 μm, specimen length 100 μm)
Barbadoes *Johnson* 1863, BM 2099, holotype.

LXXII. *SURIRELLA* Turpin

1. **S. eximia** Grev. in *Q. Jl microsc. Sci.* **5**: 10, fig. 6 (1857). (Pl. 56, Fig. 8; specimen length 95 μm)
Trinidad *Mrs Eccles*, BM 998, lectotype.
There is no drawing of this species in the Greville manuscript collection. On the slide indicated above two specimens are noted. The micrograph is the specimen most like Greville's drawing. The other specimen has a distinct central constriction which, according to Greville, is part of the variation pattern of this species.

2. **S. macraeana** Grev. in *Trans. microsc. Soc. Lond.* **10**: 20, fig. 1 (1862). (Pl. 56, Fig. 7; specimen length 190 μm)
Ceylon *Dr Macrae*, BM 2384, holotype.

3. **S. palmeriana** Grev. in *Ann. Mag. nat. Hist.* III, **16**: 4, fig. 7 (1865). (Pl. 56, Fig. 9; specimen length 130 μm)
Hong Kong *L.H.* no. 876, BM 10753, holotype.

4. **S. superba** Grev. in *Trans. bot. Soc. Edinb.* **8**: 436, figs 1–2 (1866). (Pl. 57, Fig. 1; specimen length 142 μm)
Cuba [*H. L. Smith*], BM 3530, BM 3531, BM 4670, BM 4689.
Greville states in his protologue that this species is similar to *Surirella smithii* Ralfs; BM 4670 and BM 4689 are annotated as *S. superba*. However, these slides are prepared from the same material that was used to make BM 3530 and BM 3531 which are labelled *S. smithii*. All the specimens Greville refers to *S. superba* on BM 4670 and BM 4689 and those he refers to as *S. smithii* on BM 3530 and BM 3531 should be considered as syntypes.

LXXIII. *SYNDETOCYSTIS* Ralfs ex Grev.

This genus, discovered and named by Ralfs, was described by Greville (1866*d*: 125), but he did not name the species on which it is based. This description is accurate, but Greville had earlier sent to a correspondent in America a brief and inadequate description accompanied by an inaccurate figure. These were reproduced by Walker & Chase (1887), who gave it a specific name.

1. **S. grevilleanus** Walker & Chase, *Some new and rare diatoms* II–III: 6, pl. 4, fig. 13 (1887) (*S. barbadensis* Ralfs ex Van Heurck, *Treat. Diat.*: 432, fig. 155 (1896).)
Cambridge Estate, Barbadoes, BM 2775, BM 2791, BM 2795, BM 2797, BM 2850, BM 2842, BM 2863, BM 2871, BM 2899, BM 2902, BM 2981, BM 3036, BM 3050, BM 3061, BM 3111, BM 3167, BM 3203, BM 3213, BM 3250, BM 3552, BM 3254, BM 3267, BM 3268, BM 3281, BM 3432, BM 3434, BM 3443, BM 3446, BM 3511.
The holotype of this species is clearly the original of the figure reproduced by Walker & Chase. This was on a slide belonging to G. Norman, which cannot be traced.

LXXIV. *SYNEDRA* Ehrenb.

1. **S. clavata** Grev. in *Trans. microsc. Soc. Lond.* **13**: 25, fig. 4 (1865). (Pl. 57, Fig. 2; specimen length 185 μm)
Barbadoes Cambridge Estate *Johnson*, BM 3410, BM 3441, BM 3469.
Greville states that 'not more than 4 or 5 specimens having occurred in the hundreds of slides I have examined.' The slides above are the only ones that are noted by Greville and are probably syntypes.

2. **S. normaniana** Grev. in *Q. Jl microsc. Sci.* II, **2**: 231, figs 1–3 (1862). (Pl. 57, Figs 3–5; specimen length 175 μm)
Honduras *G. Shadbolt?*, 1862, BM 2543; Honduras, *Smith* [presented to me by Mr Roper, May 1862], BM 2542.
A detailed study of this species has been recently undertaken by Wahrer, Fryxell & Cox (1985). They have transferred the species to *Licmophora* Agardh.

LXXV. *SYRINGIDIUM* Ehrenb.

A detailed study of *Syringidium* has been undertaken by Ross & Sims (1980) and Hasle & Sims (1985). *S. daemon* Grev. is considered to be the resting spore of *Cerataulina bicornis* (Ehrenb.) Hasle (*C. daemon* (Grev.) Hasle).

1. **S. daemon** Grev. in *Trans. microsc. Soc. Lond.* **14**: 83, fig. 22–28 (1866).
Hong Kong Harbour *Dr Palmer*, 1864, BM 4500; Hong Kong *L.H.* no. 567, BM 10452, syntypes.
The drawing in the Greville manuscript collections has all seven specimens, each with a MF location number. All specimens are from BM 4500.

Several of Greville's specimens have been examined and published: in Ross & Sims (1980: pl. 1, fig. 5) a specimen from BM 4500, and in Hasle & Sims (1985: fig. 3) a specimen from BM 52587 (see also figs 16 and 17 for material from Hong Kong Harbour, Aug. (1863) ex Lauder).

Hasle & Syvertsen (1980) illustrate a different specimen from BM 52587 (1980: pl. 5, fig. 30);

see also plates 7–9 for details of the vegetative valves of this species. The material from BM 52587 is from Greville's original gathering.

LXXVI. *TEREBRARIA* Grev.

1. **T. barbadensis** Grev. in *Trans. microsc. Soc. Lond.* **12**: 9, figs 12, 13 (1864). (Pl. 57, Figs 6, 7; specimen length 130 μm)
Cambridge Estate Barbadoes *Johnson*, BM 2799, syntype, BM 3444; Barbadoes, *Johnson*, 1864, BM 3188; Barbadoes, 1865, BM 3264, BM 3276.
There are two drawings in the Greville manuscript collection, each corresponding to a published figure. Only figure 12 has been annotated, with '[BM] 2799, [MF] 31/22'. The specimens on the slides are listed as girdle views. The remaining slide, BM 3444, is badly damaged and cannot be inspected. This taxon is probably a Polycistine (Ross, ms notes).

LXXVII. *THAUMATONEMA* Grev.

This genus has recently been reviewed by Ross & Sims (1985).

1. **T. barbadense** Grev. in *Trans. microsc. Soc. Lond.* **11**: 76, fig. 26 (1863). (Pl. 57, Fig. 9; specimen length 84 μm)
Cambridge Barbadoes *Johnson* 1863, BM 2853, holotype.

2. **T? costatum** Grev. in *Trans. microsc. Soc. Lond.* **13**: 97, fig. 3 (1865). (Pl. 57, Fig. 8; specimen diameter 48 μm)
Barbadoes Cambridge Estate *Johnson* 1864, BM 3419, holotype.

LXXVIII. *TRICERATIUM* Ehrenb.

This genus is clearly a heterogenous mixture of unrelated taxa and in need of revision. Recent work by Gleser (1975, 1986) proposed a revised classification into five genera: *Pseudotriceratium* Grun., *Trigonium* Cleve, *Amphitetras* Ehrenb., a redefined concept of *Triceratium*, and a new genus *Sheshukovia* Gleser. Additionally, Jousé proposed a new genus *Lisitzinia* for the smaller, cruciform species (Jousé, 1978). Many of Greville's *Triceratium* spp. are now classified in the genus *Entogonia* Ehrenb. following the revisions by Bergon (1892*a, b*) and Holmes & Brigger (1979). Further work on some species included in *Triceratium* by Greville will shortly be published by Ross & Sims (in prep.).

Greville's species cut across all of these newly defined genera. No attempt has been made to effect any taxonomic transfers of his species, except where the combinations have been made prior to this study. References have been included where relevant.

All measurements are taken along an edge of the valve except where otherwise stated.

1. **T. abercrombieanum** Grev. in *Trans. microsc. Soc. Lond.* **9**: 83, figs 7–9 (1861). (Pl. 58, Figs 1, 2; length 52·5 μm)
Barbadoes Earth, BM 2042, lectotype designated by Bergon (1892*b*: 133).
There are three illustrations with the published description and three drawings present in the Greville manuscript collection. Holmes & Brigger (1979) discuss Bergon's lectotypfication in detail. Two other pertinent slides are BM 2096 and BM 2102.

Bergon (1892*b*) referred Greville's figure 7 to *T. abercrombianum*, believing the other specimens, figures 8 and 9, to be different taxa. The specimen in figure 7 is found on BM 2042 and is the lectotype designated by Bergon (1892: 133). Holmes & Brigger (1979) accept Bergon's lectotypification but do not concur with his concept of the species; they are of the opinion that figure 9 (BM 2096) should be included, and have expanded the description.

2. **T. acceptum** Grev. in *Trans. microsc. Soc. Lond.* **13**: 9, fig. 21 (1865). (Pl. 58, Fig. 3; length 53 μm)
Cambridge Barbadoes *Johnson* 1863, BM 3082, holotype.

3. **T. aculeatum** Grev. in *Trans. microsc. Soc. Lond.* **9**: 45 (1861). (Pl. 58, Fig. 4; length 57·5 μm)

Barbadoes deposit, BM 2092, holotype.
This species was described but not illustrated by Greville. The drawing Greville intended to use is in the Greville manuscript collection. The specimen illustrated here has been identified as the holotype by Mr R. Ross.

Ehrenberg (1856) used the combination *Triceratium aculeatum* in 1856, applying it to a different taxon. In 1959 Shibkova applied it to yet another taxon (in Krotov & Shibkova, 1959). Greville's species should be cited as *T. aculeatum* Grev., non Ehrenb. (1856), nec Shibkova in Krotov & Shibkova (1959), and a new specific epithet is required.

4. **T. acutangulum** Grev. in *Trans. microsc. Soc. Lond.* **12**: 93, fig. 12 (1864), non Strelnikova (1974). (Pl. 58, Figs 5, 8; length 76 μm)
Cambridge Barbadoes *Johnson* 1864, BM 3139, holotype.
This species belongs to *Trinacria*. According to Ross & Sims (in prep.) it is a later synonym of *Triceratium cornutum* Grev.

5. **T. amoenum** Grev. in *Trans. microsc. Soc. Lond.* **9**: 75, fig. 7 (1861). (Pl. 58, Figs 9, 10; length 47·5 μm)
Nottm. deposit Maryland, BM 2163, holotype.
There are six specimens marked on the slide. The micrograph is the specimen indicated on the drawing (MF 18/13).

6. **T. approximatum** Grev. in *Trans. microsc. Soc. Lond.* **9**: 84, fig. 11 (1861). (Pl. 58, Fig. 11; length 66 μm)
Barbadoes deposit *Johnson*, BM 2103, holotype.
See Holmes & Brigger (1979: 176–179).

7. **T. araneosum** Grev. in *Trans. microsc. Soc. Lond.* **13**: 33, fig. 17 (1865). (Pl. 59, Fig. 1; length 35 μm)
Barbadoes 1865, BM 3262, holotype.

8. **T. areolatum** Grev. in *Trans. microsc. Soc. Lond.* **9**: 71, fig. 13 (1861). (Pl. 59, Fig. 2; length 62·5 μm)
Barbadoes deposit, BM 2087, holotype.

9. **T. atomus** Grev. in *Trans. microsc. Soc. Lond.* **13**: 10, fig. 22 (1865). (Pl. 59, Fig. 3; length 8 μm)
Barbadoes *Johnson* 1864, BM 3200, holotype.

10. **T. attenuatum** Grev. in *Trans. microsc. Soc. Lond.* **12**: 91, fig. 10 (1864). (Pl. 58, Figs 6, 7; length 60 μm)
Barbadoes 1864, BM 3042, holotype.

11. **T. barbadense** Grev. in *Trans. microsc. Soc. Lond.* **9**: 44, fig. 12 (1861). (Not illustrated)
Barbadoes deposit, BM 2049, BM 2079.

12. **T. blanditum** Grev. in *Trans. microsc. Soc. Lond.* **9**: 45 (1861); in *Trans. microsc. Soc. Lond.* **9**: 72, fig. 17, (1861). (Pl. 59, Fig. 4; distance across centre of valve 30 μm)
Barbadoes deposit, BM 2080, holotype.

13. **T. brevinervum** Grev. in *Trans. microsc. Soc. Lond.* **13**: 101, fig. 26 (1865). (Pl. 59, Fig. 5; length 45 μm)
Cambridge Barbadoes *Johnson* 1864, BM 3183, holotype.
Greville named this species '*Triceratium verrulosum* var. ?' on the slide label.

14. **T. browneanum** Grev. in *Trans. microsc. Soc. Lond.* **9**: 72, fig. 16 (1861). (Pl. 59, Fig. 6; length 42·5 μm)
Mud Savannah Georgia *Brown* 60, BM 2161, holotype.
The manuscript drawing and the slide label refer to six specimens. MF 28/21 is identified by Greville as the specimen used for the published illustration.

15. **T. cancellatum** Grev. in *Trans. microsc. Soc. Lond.* **13**: 9, fig. 17 (1865). (Pl. 59, Fig. 7: length 87·5 μm)
Barbadoes 1865, BM 3111, holotype.
The specimen occurs at the edge of the coverslip, which is cracked and the mountant receding, and is difficult to photograph. This species should correctly be placed in *Trinacria*, and is being studied by Ross & Sims (in prep.).

16. **T. capitatum** Ralfs ex Grev. in *Trans. microsc. Soc. Lond.* **9**: 43, fig. 10 (1861). (Pl. 59, Figs 8, 9; distance between the lower ocelli, 100 μm)
Barbadoes deposit, BM 2024, BM 2085, BM 2087, BM 2097; [Barbadoes], 624, BM 49079, holotype?
On the legend beneath the plate Greville has stated: 'The Barbadoes species are described from a fine series of slides supplied by Mr. J. T. Norman.' The text states that 'he had examined half a dozen examples before I perceived any trace of puncta at all. Mr. Rylands then kindly communicated a specimen.' A slide in the Rylands collection, BM 49079, has a specimen of *T. capitatum* at MF 38/24. Greville states that he found two further specimens. The micrographs are from BM 2024.

17. **T. cellulosum** Grev. in *Trans. microsc. Soc. Lond.* **9**: 44, fig. 14 (1861). (Not illustrated)
Barbadoes deposit, BM 2075, holotype.
The specimen is tilted at such an angle as to prevent useful micrographs being taken.

18. **T. cinnamomeum** Grev. in *Q. Jl microsc. Sci.* II, **3**: 232, fig. 12 (1863). (Pl. 59, Figs 10, 11; length 67·5 μm)
Moron deposit 1863, BM 2908, holotype.
A note on the original drawing indicates that specimen MF 14/19 has been used for the illustration. One other specimen is present on this slide (Pl. 60, Figs 1, 2, length, 42·5 μm). See Simonsen (1974: 23; 1979: 66.)

19. **T. concinnum** Grev. in *Trans. microsc. Soc. Lond.* **12**: 13, fig. 7 (1864). (Pl. 59, Fig. 12; length 62·5 μm)
Cambridge Barbadoes *Johnson* 1862, BM 2803, holotype.

20. **T. constans** Grev. in *Q. Jl microsc. Sic.* II, **3**: 233, fig. 17 (1863). (Pl. 60, Fig. 3; length 77·5 μm)
Cambridge Estate Barbadoes *Johnson* 1862, BM 2800, BM 2801; Barbadoes deposit *Johnson*, BM 2804, BM 2824, BM 2849; Barbadoes deposit 1863, BM 3029; Cambridge Barbadoes *Johnson* 1863, BM 3046; Barbadoes *Johnson* 1863, BM 3054, BM 67374; Cambridge Barbadoes, 1863, BM 3070, syntypes.
The drawing in the Greville manuscript collection is annotated 'no. 2' and 'from Mr. Ralfs' slide Barbadoes (Cambridge)'. There is only one slide in Ralfs' collection (BM 67374) that has specimens of this species. The slide was originally Greville's and may be referable to the annotations of the manuscript drawing. The specimen is a partial valve. The micrographs in this work are taken from BM 2801.

21. **T. convexum** Grev. in *Trans. microsc. Soc. Lond.* **10**: 27, fig. 6 (1862). (Micrograph not included)
Ceylon *Dr Macrae*, BM 2386, holotype.

22. **T. cornutum** Grev. in *Trans. microsc. Soc. Lond.* **9**: 45 (1861); in *Trans. microsc. Soc. Lond.* **9**: 69, fig. 8 (1861). (Pl. 60, Fig. 4; length 34 μm)
Barbadoes deposit, BM 2075, holotype.
This species, which belongs to *Trinacria*, is currently being studied by Ross & Sims (in prep.).

23. **T. davyanum** Grev. in *Q. Jl microsc. Sci.* II, **2**: 232, fig. 4 (1862). (Pl. 60, Fig. 5; length 157 μm)
Chimborazo Barbadoes *Johnson* 1862, BM 2524, holotype.
Greville states: 'The only two examples as yet known were both discovered by . . . Mr. Johnson.

The first is a fragment [Mrs Bury] . . . the other is entire [C. Johnson].' BM 2524 is the entire valve and hence the holotype. BM 2525 is marked 'Chimborazo, Barbadoes – *Johnson* (Mrs Bury) (fragment) (1862)'.

There is a detailed discussion of this species in Holmes & Brigger (1979: 172–174).

24. **T. decorum** Grev. in *Trans. microsc. Soc. Lond.* **10**: 92, fig. 7 (1862). (Pl. 60, Figs 7, 8; length 58 μm)
Indian Oc. soundings *Captain Pullen* 2200 fathoms, BM 1922, holotype?

25. **T. definitum** Grev. in *Trans. microsc. Soc. Lond.* **12**: 84, fig. 8 (1864).
Cambridge Estate Barbadoes *Johnson*, BM 3017, holotype.
The drawing in the Greville manuscript collection indicates BM 3017 as the holotype slide. However, specimens have not been found.

26. **T. delicatum** Grev. in *Trans. microsc. Soc. Lond.* **9**: 45 (1861); in *Trans. microsc. Soc. Lond.* **9**: 70, fig. 11 (1861). (Pl. 60, Figs 6, 9; length 28 μm)
Barbadoes deposit, BM 2084, holotype.

27. **T. denticulatum** Grev. in *Q. Jl microsc. Sci.* II, **3**: 233, fig. 14 (1863). (Pl. 60, Fig. 10; length 60 μm)
Cambridge Barbadoes *Johnson* 1863, BM 2763, holotype.

28. **T. disciforme** Grev. in *Q. Jl microsc. Sci.* II, **3**: 232, fig. 11 (1863). (Pl. 60, Fig. 11; specimen diameter 88 μm)
Cambridge Barbadoes *Johnson* 1862, BM 2833, holotype.

29. **T. dobreeanum** G. Norman ex Grev. in *Trans. microsc. Soc. London.* **13**: 6, figs 23, 24 (1865). (Pl. 61, Figs 1, 2; Valve width 42 μm, valve height from base to tips 93 μm, specimen height 185 μm)
Sidney *Norman* 1864, BM 3340, holotype.
There is a drawing in the Greville manuscript collection but it gives no indication to which slide was used for the published figure. The slide above is probably the specimen used for figure 24. There is no other specimen of this taxon on the slide. That used for figure 23 has not been found.

30. **T. dulce** Grev. in *Trans. microsc. Soc. Lond.* **14**: 9, fig. 20 (1866). (Pl. 60, Fig. 12; length 67·5 μm)
Barbadoes *Johnson* 1863, BM 3094, holotype.

31. **T. exornatum** Grev. in *Trans. microsc. Soc. Lond.* **13**: 9, fig. 25 (1865). (Pl. 61, Figs 4–6; length 120 μm)
Cambridge Barbadoes 1865, BM 3079, holotype.

32. **T. figuratum** Grev. in *Trans. microsc. Soc. Lond.* **13**: 101, fig. 15 (1865). (Pl. 61, Fig. 7; length 25 μm)
Barbadoes *Johnson* 1864, BM 3281, holotype.

33. **T. firmum** Grev. in *Trans. microsc. Soc. Lond.* **12**: 93, fig. 8 (1864). (Pl. 61, Fig. 8; length 50 μm)
Barbadoes *Johnson* 1863, BM 3087, holotype.
The slide label is not annotated by Greville. However, the original manuscript drawing reveals that specimen MF 20/17 is the holotype.

34. **T. flexuosum** Grev. in *Trans. microsc. Soc. Lond.* **10**: 93, fig. 9 (1862). (Pl. 61, Fig. 3; length 58 μm)
Ind. Oc. Soundings *Capt. Pullen* 2200 fathoms, BM 1922 (MF 30/25).
There is no drawing of this species in the Greville manuscript collection. This is the only slide from the type locality with a specimen of this taxon. See Simonsen (1974: 23).

35. **T. foveatum** Grev. in *Trans. microsc. Soc. Lond.* **12**: 93, fig. 15 (1864). (Pl. 61, Fig. 9; length 66 μm)
Cambridge Barbadoes *Johnson* 1863, BM 3072, holotype.

The holotype is situated at the extreme edge of the coverslip. The mountant is cracking and hence good micrographs are not possible.

36. **T. giganteum** Grev. in *Trans. microsc. Soc. Lond.* **9**: 77, fig. 10 (1861). (Pl. 62, Fig. 1; length 150 μm)
Barbadoes deposit (Cambridge) *Mrs Bury*, BM 2107, holotype.

37. **T. gratiosum** Grev. in *Trans. microsc. Soc. Lond.* **9**: 85, figs 12, 13 (1864). (BM 2176, Pl. 62, Fig. 6, length 80 μm; BM 2085, Pl. 62, Fig. 2, length 55 μm)
Barbadoes deposit, BM 2085; Barbadoes deposit, *Norman*, BM 2176, syntypes.
Two figures are given in the protologue and the drawings of both are extant in the Greville manuscript collection. These must both be regarded as syntypes. See Holmes & Brigger (1979: 181–182).

38. **T. hardmanianum** Grev. in *Trans. microsc. Soc. Lond.* **13**: 55, fig. 25 (1865). (Pl. 62, Figs 3–5, 7; length 87·5 μm)
Springfield Barbadoes *Hardman* 1864, BM 3341, holotype.

39. **T. harrisonianum** G. Norman & Grev. in *Trans. microsc. Soc. Lond.* **9**: 76, fig. 9 (1861).
'Barbadoes deposit (Springfield Estate); exceedingly rare.'
There are no slides in the Greville collection from this locality that preceed 1861. It is possible that the holotype specimen did not come from a slide in Greville's collection but from Norman's. This slide has not been traced.

40. **T. implicitum** Grev. in *Trans. microsc. Soc. Lond.* **13**: 102, fig. 25 (1865). (Pl. 62, Figs 8, 9; length 50 μm)
Cambridge Barbadoes *Johnson* 1865, BM 3447, holotype.

41. **T. inaequale** Grev. in *Trans. microsc. Soc. Lond.* **12**: 91, fig. 19 (1864). (Pl. 63, Fig. 1; distance between tips at widest angle 62 μm)
Cambridge Barbadoes *Johnson* 1863, BM 3073, holotype.
The specimen indicated on the drawing is not that which is indicated on the slide.

42. **T. inconspicuum** Grev. in *Trans. microsc. Soc. Lond.* **9**: 45 (1861); in *Trans. microsc. Soc. Lond.* **9**: 70, fig. 10 (1861). (Pl. 63, Figs 2, 3; length 28 μm)
Barbadoes deposit, BM 2084, holotype.
This species has recently been transferred to the genus *Lisitzinia* (Gleser in Gleser, Dolmatova & Lupikina, 1986: 858).

43. **T. inelegans** Grev. in *Trans. microsc. Soc. Lond.* **14**: 8, fig. 21 (1866). (Pl. 63, Figs 4, 7; length 71 μm)
Monterey *L. H.* no. 605, BM 10486, holotype.

44. **T. inflatum** Grev. in *Q. Jl microsc. Sci.* II, **3**: 232, fig. 15 (1863). (Pl. 63, Fig. 5; length 77·5 μm)
Cambridge Barbadoes *Johnson* 1863, BM 2873, holotype.

45. **T. inglorium** Grev. in *Trans. microsc. Soc. Lond.* **13**: 103, fig. 18 (1865).
'Manilla; obtained from shell-cleanings, by L. Hardman, Esq.'
The drawing in the Greville manuscript collection is annotated with '120 H Manilla'. This probably indicates a Hardman slide. This slide has not been traced.

46. **T. inopinatum** Grev. in *Trans. microsc. Soc. Lond.* **9**: 84, fig. 10 (1861). (Pl. 63, Fig. 6; length 42·5 μm)
Barbadoes deposit, BM 2081, holotype?
See Bergon (1892*b*: 134).

47. **T. inornatum** Grev. in *Trans. microsc. Soc. Lond.* **10**: 94, fig. 10 (1862). (Pl. 63, Fig. 8; length 55 μm)
Indian Oc. soundings 2200 fathoms, BM 2566, holotype.

There is no drawing of this specimen in the Greville manuscript collection. The above slide is the only one in Greville's collection with a specimen. See Simonsen (1979: 23).

48. **T. insignis** Grev. in *Trans. microsc. Soc. Lond.* **9**: 75, fig. 5 (1861). (Pl. 64, Fig. 1; length 73 μm)
Barbadoes deposit, BM 2168, holotype.

49. **T. irregulare** Grev. in *Trans. microsc. Soc. Lond.* **12**: 92, fig. 5 (1864). (Micrographs not included)
Cambridge Barbadoes *Johnson* 1863, BM 3074, holotype.

50. **T. kittonianum** Grev. in *Trans. microsc. Soc. Lond.* **13**: 8, fig. 18 (1865). (Pl. 67, Fig. 3; length across tips at widest angle, 140 μm)
Nottingham deposit, 4427, *Wynne Baxter*, BM 59049, holotype?
In the protologue, Greville refers to drawings prepared by Mr Kitton of this species which Kitton identified as *T. solenoceros* Ehrenb. In Wynne Baxter's collection there are two of Kitton's slides from Nottingham of *T. solenoceros*. BM 59050 is a specimen referable to *T. solenoceros* but BM 59049 is a specimen of *T. kittonianum*. It is likely that this is the slide from which the drawings were made and thus is the holotype. There appear to be no specimens in the Greville collection.

51. **T. labrynthaeum** Grev. in *Trans. microsc. Soc. Lond.* **9**: 45 (1861); in *Trans. microsc. Soc. Lond.* **9**: 70, fig. 12 (1861).
Barbadoes deposit, BM 2079, holotype.
This specimen cannot be traced on the slide that is indicated as the type.

52. **T. latum** Grev. in *Trans. microsc. Soc. Lond.* **13**: 103, fig. 20 (1865).
'Singapore; obtained from shell-cleanings, by L. Hardman, Esq.'
The drawing in the Greville manuscript collection is annotated with '122 H Singapore'. This slide is probably from the Hardman collection but has not been traced.

53. **T. lautum** Grev. in *Trans. microsc. Soc. Lond.* **14**: 82, fig. 20 (1866). (Pl. 64, Fig. 2, 4–6; length 135 μm)
Barbadoes 1865, BM 3463, holotype.

54. **T. ligulatum** Grev. in *Trans. microsc. Soc. Lond.* **12**: 91, fig. 9 (1864). (Pl. 64, Fig. 3; distance between tips at widest angle, 88 μm)
Cambridge Barbadoes *Johnson* 1863, BM 3088, holotype.
The slide label is not annotated with respect to *T. ligulatum*. However, the drawing indicates that specimen MF 24/11 is the holotype which is marked simply '*Triceratium*'. The slide is made of rather thick glass and the mountant poor, hence high magnification is not possible.

55. **T. lineatum** Grev. in *Trans. microsc. Soc. Lond.* **11**: 75, fig. 24 (1863). (Pl. 64, Fig. 7; length 87·5 μm)
Cambridge Barbadoes *Johnson* 1863, BM 2606, holotype.
The holotype slide is of thick glass and hence high magnification is not possible.

56. **T. lineolatum** Grev. in *Q. Jl microsc. Sci.* II, **3**: 233, fig. 16 (1863). (Pl. 64, Fig. 8, 9; length 102·5 μm)
Bridgewater Barbadoes *Johnson* Jany. 1 1863, BM 2743, holotype.
The holotype slide is of thick glass and hence high magnification is not possible.

57. **T. lobatum** Grev. in *Q. Jl microsc. Sci.* II, **3**: 233, fig. 13 (1863).
Cambridge Barbadoes *Johnson* 1863, BM 2757, holotype.
It is likely that the coverslip of this slide has moved at sometime in the past. The MF location (28/35) given on the drawing does not locate this species, and it is not in the surrounding area.

58. **T. mammosum** Grev. in *Trans. microsc. Soc. Lond.* **14**: 9, fig. 19 (1866). (Pl. 64, Fig. 10; length 47·5 μm)
Cambridge Barbadoes *Johnson* 1865, BM 3434, holotype.

59. **T. microcephalum** Grev. in *Trans. microsc. Soc. Lond.* **9**: 74, fig. 4 (1861). (Pl. 64, Figs 11, 12; distance between tips at only angle, 50 μm)
Barbadoes deposit, BM 2095, holotype.
Greville states that this species is exceedingly rare in the Barbados deposits. The holotype is partially fragmented and obscured by debris.

60. **T. microstictum** Grev. in *Trans. microsc. Soc. Lond.* **12**: 90, fig. 17 (1864). (Pl. 65, Figs 1–3; length 120 μm)
Cambridge Barbadoes *Johnson* 1864, BM 3033, holotype.

61. **T. modestum** Grev. in *Trans. microsc. Soc. Lond.* **12**: 93, fig. 14 (1864). (Pl. 67, Fig. 5; length 57·5 μm)
Barbadoes *Johnson* 1863, BM 3090, holotype.

62. **T. moronense** Grev. in *Trans. microsc. Soc. Lond.* **13**: 32, fig. 18 (1865). (Pl. 65, Figs 4, 5; length 110 μm)
Moron deposit *Johnson* 1864, BM 3236, holotype.

63. **T. nebulosum** Grev. in *Trans. microsc. Soc. Lond.* **9**: 86, fig. 15 (1861).
'Barbadoes'.
The drawing in the Greville manuscript collection is annotated with 'Norman (215) – Barbados'. This slide has not been traced.

64. **T. neglectum** Grev. in *Trans. microsc. Soc. Lond.* **13**: 7, fig. 20 (1865). (Pl. 65, Figs 7, 8; length 55 μm)
Barbadoes *Johnson* 1863, BM 2941, holotype.

65. **T. nitescens** Grev. in *Trans. microsc. Soc. Lond.* **13**: 8, fig. 19 (1865). (Pl. 65, Figs 10, 11; length 55 μm)
Barbadoes *Johnson* 1864, BM 3198, holotype.
This specimen is located at the extreme edge of the coverslip and in rather thick and fragmented mountant.

66. **T. nitidum** Grev. in *Trans. microsc. Soc. Lond.* **9**: 44, fig. 13 (1861). (Pl. 66, Figs 1, 2; length 30 μm)
[Barbadoes deposit], BM 2072, holotype.
This specimen is located at the extreme edge of the coverslip and in rather thick and fragmented mountant.

67. **T. normanianum** Grev. in *Q. Jl microsc. Sci.* II, **3**: 234, fig. 19 (1863).
'Barbadoes deposit, from Cambridge estate; G. Norman, Esq.'
A drawing in the Greville manuscript collection is annotated 'no. 9 Norman'. As Greville states that Norman was the only other person to have seen this species, the annotation probably refers to Norman's holotype slide. This slide has not been found in BM.

68. **T. notabilis** Grev. in *Trans. microsc. Soc. Lond.* **9**: 74, figs 2, 3 (1861). (Pl. 67, Figs 1, 2, 4; length 82·5 μm)
Barbadoes deposit, BM 2086, BM 2089, BM 2094.
Although there are only two figures illustrating this species, the drawings in Greville's manuscript collection give three slide numbers: BM 2086 (MF 28/27) and BM 2094 (MF 23/12 and 19/14) on one drawing (figure 2), and BM 2089 (MF 31/21) on the other (figure 3). These are syntypes. BM 2089 has two additional specimens. The micrographs are taken from BM 2089 (MF 31/21).

69. **T. obesum** Grev. in *Trans. microsc. Soc. Lond.* **12**: 90, fig. 11 (1864). (Pl. 65, Figs 6, 9; length 25 μm)
Cambridge Barbadoes *Johnson* 1863, BM 3078, holotype.
This slide has been broken and part of the coverslip has fragmented. Fortunately this does not affect the specimen.

70. **T. obscurum** Grev. in *Trans. microsc. Soc. Lond.* **9**: 76, fig. 8 (1861). (Pl. 66, Fig. 3; length 51·5 μm)
Trinidad *Dr Davy*, BM 2162, holotype.
This species should rightly be considered as belonging to the genus *Azpeitia*. The annulus and distinctive border are clearly seen on the micrograph, although neither is apparent on Greville's original drawing. The correct name for this species is given in the appendix.

71. **T. oculatum** Grev. in *Trans. microsc. Soc. Lond.* **12**: 94, fig. 20 (1864). (Pl. 66, Figs 4, 5; length 55 μm)
Barbadoes deposit *Johnson* 1863, BM 3099, holotype.

72. **T. ornatum** Grev. in *Trans. microsc. Soc. Lond.* **9**: 45 (1861). (Pl. 67, Fig. 6; length 47·5 μm)
Barbadoes deposit, BM 2072, BM 2079, BM 2108, syntypes.
Greville described this species in one of the early series of the 'New and Rare . . .' papers where he intended to publish fuller descriptions and a figure in later parts. This species was never re-described nor was an illustration published. In the Greville manuscript collection there is a drawing of *T. ornatum*. The annotations indicate BM 2079 (MF 34/14) and BM 2072 (MF 21/17). The drawing is also annotated with an inked number '15', indicating that Greville was considering it for publication at some stage as figure 15 of a plate.

73. **T. pallidum** Grev. in *Trans. microsc. Soc. Lond.* **12**: 84, fig. 7 (1864). (Pl. 66, Figs 6, 7; length 65 μm)
[Cambridge Estate Barbadoes *Johnson*], BM 2972, holotype.
There is no indication on the slide of the whereabouts of this specimen. The drawing gives the location.

74. **T. partitum** Grev. in *Trans. microsc. Soc. Lond.* **12**: 14, fig. 8 (1864). (Pl. 66, Fig. 8; length 65 μm)
Cambridge Barbadoes *Johnson* 1862, BM 2830, holotype.
This specimen is located on the extreme edge of the coverslip in cracked mountant, hence the poor micrograph.

75. **T. pauperculum** Grev. in *Trans. microsc. Soc. Lond.* **13**: 55, fig. 26 (1865). (Pl. 66, Figs 9, 10; length 37·5 μm)
[Cambridge Estate Barbadoes *Johnson*], BM 3409, holotype?
Greville's annotation on the manuscript drawing is '[BM] 3289, 24/33'. However, BM 3289 is a slide from Arran and must have been given in error. BM 3409 has a specimen identified by Greville as *T. pauperculum*, located at MF 24/33, and is probably the holotype.

76. **T. pectinatum** Grev. in *Trans. microsc. Soc. Lond.* **10**: 92, fig. 6 (1862).
Scrapings of *Strombus* shell *G. Norman*, (303) 1860, BM 2484.
The above slide is the only one in Greville's collection that could be a candidate for the holotype. No specimen has been located on the above slide. The type specimens are probably from a G. Norman slide. These have not yet been traced.

77. **T. perminutum** Grev. in *Trans. microsc. Soc. Lond.* **12**: 89, fig. 18 (1864). (Pl. 68, Figs 1, 2; length 32·5 μm)
Barbadoes 1865, BM 3107, holotype.

78. **T. perpusillum** Grev. in *Trans. microsc. Soc. Lond.* **12**: 92, fig. 13 (1864). (Pl. 68, Figs 3, 6; length 23 μm)
Barbadoes 1865, BM 3114, holotype.

79. **T. picturatum** Grev. in *Trans. microsc. Soc. Lond.* **14**: 83, fig. 19 (1866). (Pl. 68, Figs 7, 8; distance between tips at widest angle 80 μm)
Barbadoes 1864, BM 3044, holotype.

80. **T. plumosum** Grev. in *Trans. microsc. Soc. Lond.* **12**: 85, fig. 4 (1864). (Pl. 69, Figs 1, 4; length 123 μm)

Cambridge Estate Barbadoes, BM 2779, BM 3037, BM 3071, BM 3075, BM 3085 lectotype, BM 3096, BM 3105, BM 3108, BM 3186, BM 3441, BM 3443, BM 4778.
There is a drawing in the Greville manuscript collection but no indication as to which slide was used for the published figure.

81. **T. polygonium** Grev. in *Trans. microsc. Soc. Lond.* **13**: 105, fig. 14 (1865). (Pl. 69, Figs 2, 5; length 92·5 μm)
Rock Ballast Stoneferry nr. Hull [4422], BM 59044, holotype?
There is a single slide in the Greville collection from the locality indicated in the protologue: BM 1898 'Stoneferry, Hull, *G. Norman*, 11.59 (222)'. No specimen of *T. polygonium* could be located. However, in Wynne-Baxter's collection there is a slide marked 'Rock Ballast Stoneferry nr. Hull [4422] *Triceratium polygonium* Grev.' In Baxter's handwriting, and 'Figured by Dr. Greville in J.M.S. vol. XIII, pl. VII, fig. 14.' in Kitton's own hand. As Greville says in the protologue that his specimen came from Kitton's cabinet, it is highly probable that this is the holotype.

82. **T. praetenue** Grev. in *Trans. microsc. Soc. Lond.* **12**: 89, fig. 16 (1864). (Pl. 68, Figs 4, 5; length 42·5 μm)
Barbadoes *Johnson* 1863, BM 3076, holotype.
Two specimens are indicated on the slide, but the manuscript drawings indicate that the specimen at MF 24/33 is the holotype.

83. **T. productum** Grev. in *Trans. microsc. Soc. Lond.* **9**: 45 (1861); in *Trans. microsc. Soc. Lond.* **9**: 69, fig. 9 (1861). (Pl. 69, Fig. 3; length 62·5 μm)
Barbadoes deposit, BM 2084, holotype.

84. **T. prominens** Grev. in *Q. Jl microsc. Sci.* II, **3**: 231, fig. 10 (1863).
Cambridge Barbadoes *Johnson* 1863, BM 2850, holotype.
This slide is cracked and the specimen has probably moved from its original position.

85. **T. pulcherrimum** Grev. in *Trans. microsc. Soc. Lond.* **9**: 82, fig. 6 (1861). (Pl. 69, Figs 6, 7; Pl. 70, Fig. 1; length across longest side 102 μm)
Barbadoes deposit (Cambridge) *Mrs Bury*, BM 2107, holotype.
See Holmes & Brigger (1979: 188).

86. **T. quadrangulare** Grev. in *Trans. microsc. Soc. Lond.* **13**: 10, fig. 26 (1864). (Pl. 70, Figs 7, 8; valve length 65 μm)
Cambridge Estate Barbadoes *Johnson* 1863, BM 3186; Cambridge Estate Barbadoes *Johnson* 1864, BM 3190, syntypes.
The micrograph is from BM 3190 (MF 16/20).

87. **T. quadratum** Grev. in *Trans. microsc. Soc. Lond.* **13**: 104, fig. 19 (1865). (Pl. 70, Figs 2, 3; length 112 μm)
Cambridge Barbadoes *Johnson* 1863, BM 2902, 3263 syntypes.
The manuscript drawing is annotated with two slide numbers, 2902 and 3263. Greville gives the location MF 36/28 for the specimen on BM 2902 but this does not locate a specimen. BM 3263 is given as a slide number only.

88. **T. quadricorne** Grev. in *Trans. microsc. Soc. Lond.* **13**: 103, fig. 16 (1865). (Pl. 70, Figs 4, 5; distance across centre of valve 50 μm)
New Caledonia 1862, BM 2767, holotype.

89. **T. quinquelobatum** Grev. in *Trans. microsc. Soc. Lond.* **14**: 83, fig. 21 (1866).
'Moron deposit, Province of Seville; Rev. T. G. Stokes.'
The drawing in the Greville manuscript collection and series of manuscript notes are both annotated 'Moron, Stokes'. There is only a single slide that corresponds to these data, but no specimen has yet been located on the slide.

90. **T. repletum** Grev. in *Trans. microsc. Soc. Lond.* **14**: 83, fig. 18 (1866). (Pl. 71, Figs 1, 2; length 70 μm)

Cambridge Barbadoes *Johnson* 1863, BM 3051, holotype.

91. **T. reticulatum** Grev. in *Trans. microsc. Soc. Lond.* **13**: 104, fig. 21 (1865). (Pl. 71, Figs 3, 4; distance across valve centre, 65 μm)
Barbadoes Cambridge Estate *Johnson* 1864, BM 3416, holotype.
The manuscript drawing identifies specimen MF 23/26 as the holotype. At that location there appears to be a whole frustule with each valve slightly separated, giving two overlapping images. The micrograph is of the uppermost valve.

92. **T. robertsianum** Grev. in *Q. Jl microsc. Sci.* II, **3**: 231, fig. 9 (1863). (Pl. 71, Figs 5, 6; length 117 μm)
Curteis Straits, BM 2611, holotype.

93. **T. robertsianum** Grev. in *Trans. microsc. Soc. Lond.* **14**: 7, fig. 22 (1866). (Pl. 72, Figs 1, 2; length 85 μm)
[Woodlark Is. South Pacific, *Mr Roberts*], BM 2725, holotype.
The location of the holotype specimen has been obtained from the manuscript drawing and the slide annotated by Mr R. Ross. The slide label was not annotated by Greville.
The name is a later homonym of the above and therefore illegitimate under Art. 64.1.

94. **T. robustum** Grev. in *Trans. microsc. Soc. Lond.* **9**: 71, fig. 15 (1861). (Pl. 72, Figs 5, 6; length 85 μm)
Cove Calvert Co. Maryland, BM 2119, syntypes.
There is a drawing in the Greville manuscript collection but no indication is given of which specimen was used for the published figure. There are three specimens on this slide.

95. **T. roperianum** Grev. in *Trans. microsc. Soc. Lond.* **10**: 93, fig. 8 (1862). (Pl. 72, Figs 7, 8; length 20 μm)
Indian Ocean soundings 2200 fathoms, BM 2534 holotype.

96. **T. rotundatum** Grev. in *Trans. microsc. Soc. Lond.* **9**: 75, fig. 6 (1861). (Pl. 71, Fig. 7; distance between tips at widest angle, 40 μm)
Barbadoes deposit, BM 2111, holotype.

97. **T. rylandsianum** Grev. in *Trans. microsc. Soc. Lond.* **12**: 90, fig. 6 (1864). (Pl. 72, Figs 3, 4; distance between tips at widest angle 56 μm)
Cambridge Barbadoes *Johnson* 1863, BM 3074, holotype.

98. **T. sexangulatum** Grev. in *Trans. microsc. Soc. Lond.* **13**: 103, fig. 24 (1865). (Pl. 73, Figs 1, 2; valve length 48 μm)
[Woodlark Island *Dr Roberts*], BM 2725, holotype.

99. **T. smithianum** Grev. in *Trans. microsc. Soc. Lond.* **12**: 92, fig. 7 (1864). (Pl. 70, Fig. 6; length 125 μm)
Barbadoes, 1865, BM 3105, BM 3114, BM 3469, lectotype.
Greville noted: 'This species was kindly communicated to me by its discoverer, Mr. G. J. Smith, of Workington, and the specimen accidentally destroyed, but not before I had made the drawing now engraved'. Greville says he saw specimens additional to the holotype before he published this name. There are three specimens in his collection which are paratypes. BM 3469 is an entire valve and designated as lectotype. The drawing is in the Greville manuscript collection.

100. **T. stokesianum** Grev. in *Trans. microsc. Soc. Lond.* **14**: 8, fig. 23 (1866).
'Moron deposit, Province of Seville; Rev. T. G. Stokes.'
Greville states in the protologue: 'No one but Mr. Stokes has been so fortunate as to discover the subject of the present notice.' The drawing is in the Greville manuscript collection but there is only a single slide that corresponds to the locality data. No specimen has yet been located on the slide.

101. **T. subcapitatum** Grev. in *Q. Jl microsc. Sci.* II, **3**: 234, fig. 20 (1863). (Pl. 73, Figs 3, 4; distance between tips at widest angle, 48·5 μm)

[Cambridge Estate Barbadoes *Johnson*], BM 2864, holotype.
The glass of this slide is very thick and only just allows high magnification to be used.

102. **T. tesellatum** Grev. in *Trans. microsc. Soc. Lond.* **9**: 71, fig. 14 (1861). (Pl. 73, Figs 5, 6; length 50 μm)
Nottingham deposit Maryland, [Norman], BM 2185, holotype.
There are three specimens indicated on the slide label. The manuscript drawing indicates specimen MF 22/32 as holotype.

103. **T. thwaitesianum** Grev. in *Trans. microsc. Soc. Lond.* **10**: 28, fig. 5 (1862). (Pl. 73, Figs 7, 8; length 113 μm)
C. B. Sp. [Cape of Good Hope] *Dr Macrae* 1861, BM 2393, holotype.
The holotype is one of four specimens on a selected slide.

104. **T. trilineatum** Grev. in *Trans. microsc. Soc. Lond.* **13**: 56, fig. 27 (1865). (Pl. 73, Figs 9, 10; length 35 μm)
Barbadoes *Johnson* 1864, BM 3272, holotype.

105. **T. tumidum** Grev. in *Q. Jl microsc. Sci.* II, **3**: 234, fig. 18 (1863). (Pl. 73, Figs 11, 12; length 100 μm)
Barbadoes *Johnson* 1863, BM 2845, holotype.

106. **T. unguiculatum** Grev. in *Trans. microsc. Soc. Lond.* **12**: 85, fig. 9 (1864). (Pl. 74, Figs 1–3; length across valve face 88 μm)
Cambridge Barbadoes *Johnson* 1862, BM 2806, holotype.
Information from the manuscript drawing indicates that specimen MF 33/18 is the holotype and this has been annotated as such by Mr R. Ross.

107. **T. variegatum** Grev. in *Trans. microsc. Soc. Lond.* **9**: 85, fig. 14 (1861).
'Barbadoes'.
Greville states in the protologue: 'Of this beautiful diatom I have seen only a single specimen.' The drawing is annotated with 'Barbadoes – Norman (from Kitton).' This slide has not been traced. See Holmes & Brigger (1979: 193).

108. **T. venulosum** Grev. in *Trans. microsc. Soc. Lond.* **12**: 90, fig. 21 (1864).
Cambridge Barbadoes deposit, *C. Johnson*, 1863, BM 3046, holotype.
The drawing in the Greville manuscript collection is annotated with '[BM] 3046, 12/25', but no specimen has been located.

109. **T. westianum** Grev. in *Trans. microsc. Soc. Lond.* **9**: 43, fig. 11 (1861). (Pl. 74, Fig. 5; distance between tips at widest angle, 40 μm)
Barbadoes deposit, BM 2029, holotype.
The manuscript drawing indicates BM 2028 as the holotype but no specimen is located. However, the MF co-ordinates provided reveal a specimen on BM 2029 and hence this is considered to be the holotype and Greville's annotation a typographical error.

110. **T. zonatulatum** Grev. in *Trans. microsc. Soc. Lond.* **13**: 102, fig. 17 (1865). (Pl. 74, Figs 7, 8; distance across valve centre 30 μm; Pl. 74, Fig. 6, distance across valve face 30 μm)
Singapore, BM 10523, L. H. no. 645, holotype.
As indicated in Greville's protologue, the slide used for the type description came from L. Hardman. The drawing is marked '122H Singapore'. The number on Greville's drawing, 122, bears no relationship to Hardman's numbering. On the slide there are 15 specimens. All must be regarded as syntypes.

111. **T. zonatum** Grev. in *Trans. microsc. Soc. Lond.* **12**: 84, fig. 3 (1864). (Pl. 74, Fig. 4; length 60 μm)
Cambridge Barbadoes *Johnson* 1864, BM 3040, holotype.
The slide is made from thick glass and hence high magnification cannot be used.

LXXIX. *XANTHIOPYXIS* Ehrenb.

1. **X? umbonatus** Grev. in *Trans. microsc. Soc. Lond.* **14**: 2, fig. 5 (1866). (Pl. 74, Figs 9–11; specimen diameter 95 μm)
Monterey, BM 10571, *L. H.* no. 672, BM 10573, *L. H.* no. 673.
There is a drawing in the Greville manuscript collection but it is without annotations. The above specimens are considered syntypes.

Appendix

The nomenclatural changes that have been made in this paper are detailed below.

1. **Azpeitia obscurum** (Grev.) P. A. Sims, **comb. nov.***

Triceratium obscurum Grev. in *Trans. microsc. Soc. Lond.* **9**: 76 (1861).
Triceratium antiquum Pant. in *Beitr. foss. Bacill. Ungarns* **1**: 51 (1886).
Azpeitia tempérei M. Perag. in Temp. & Perag., *Diat. Monde entier*, 326, fasc. 21, nos 658–660 (1912).
Azpeitia antiqua (Pant.) P. A. Sims in *Syst. Bot. Monogr.* **13**: 6 (1986).
For discussion see p. 57.

2. **Odontella hastata** (Grev.) J. Fenner ex D. M. Williams, **comb. nov.**

Hemiaulus hastatus Grev. in *Trans. microsc. Soc. Lond.* **13**: 31, fig. 15 (1865).

Fenner (1982) transferred *H. hastatus* to *Odontella*, but the combination is not effectively published as it appeared in an unpublished Ph. D. thesis. See p. 36.

3. **Perissonoë parvula** (Grev.) D. M. Williams, **comb. nov.**

Amphitetras parvula Grev. in *Edinb. New phil. J.* II, **18**: 37, fig. 12 (July 1863); in *Trans. bot. Soc. Edinb.* **7**: 537, fig. 12 (1863) [non *A. parvula* Janisch & Rabenh. in *Beitr. kenntn. Alg.*: **4**, pl. 1, fig. 4, (Oct.–Nov. 1863).]
Amphitetras cruciata Janisch & Rabenh. in *Beitr. kenntn. Alg.*: **4**, pl. 1, fig. 5 (Oct.–Nov. 1863).
Amphitetras crucifera Kitton in *Sci. Gossip* **3**: 271, fig. 205 (1867).
Rhaphoneis amphiceros var. *tetragona* Grun. in Van Heurck, *Syn. Diat. Belge*: pl. 116, fig. 16 (1883).
Amphitetras grevillei De Toni, in *Syll. Alg.* **2**: 906 (1894), nom. superfl. (Art. 63.1).
Rhaphoneis amphiceros var. *cruciata* (Janisch & Rabenh.) Mereschk. in *Scripta Bot. Horti Univ. Imp. Petropol.* **18**: 151, pl. 4, figs 19, 20 (1902).
Perissonoë cruciata (Janisch & Rabenh.) G. W. Andrews & Stoelzel in *Proc. 7th Internat. Diat. Symp.*: 226, pl. 1, figs 1–8, pl. 2, figs 21, 23–26, pl. 3, figs 27, 28, 30, pl. 4, figs 31–34 (1984).

When Janisch & Rabenhorst (1863) described the new species *Amphitetras cruciata* they were unaware of Greville's slightly earlier publication of the same species with the name *A. parvula*. Simultaneously, Janisch & Rabenhorst published another new *Amphitetras* under the name of *A. parvula*. Their *A. parvula* is clearly different from that of Greville's. The exact date of publication of the Janisch & Rabenhorst taxon is Oct.–Nov. 1863 (according to Stafleu & Cowan, 1983). Greville published his name in both the *Transactions of the Botanical Society of Edinburgh* and *The Edinburgh New Philosophical Journal*. The latter was published in July 1863 and hence predates that of Janisch & Rabenhorst. De Toni (1894) proposed a new name, *A. grevillei*, for *A. parvula* Grev., but this is a *nom. superfl.* Greville also made reference to *A. crucifera* Kitton. This name, however, remained unpublished until 1867. A slide of Kitton's material is present in the Greville herbarium (BM 4412). See p. 7.

* This note is by P. A. Sims.

4. **Pseudauliscus grevillei** R. Ross, **nom. nov.***

Auliscus nebulosus Grev. in *Trans. microsc. Soc. Lond.* **11**: 74, fig. 21 (1863).
Pseudauliscus nebulosus (Grev.) Rattray in *Jl R. microsc. Soc.* **1888**: 904 (1888), non *Pseudauliscus nebulosus* Leuduger-Fortmorel in *Mém. Soc. Émul. Côtes Nord*: 64, pl. 7, fig. 74 (1879) (Art. 64.1). See p. 17.

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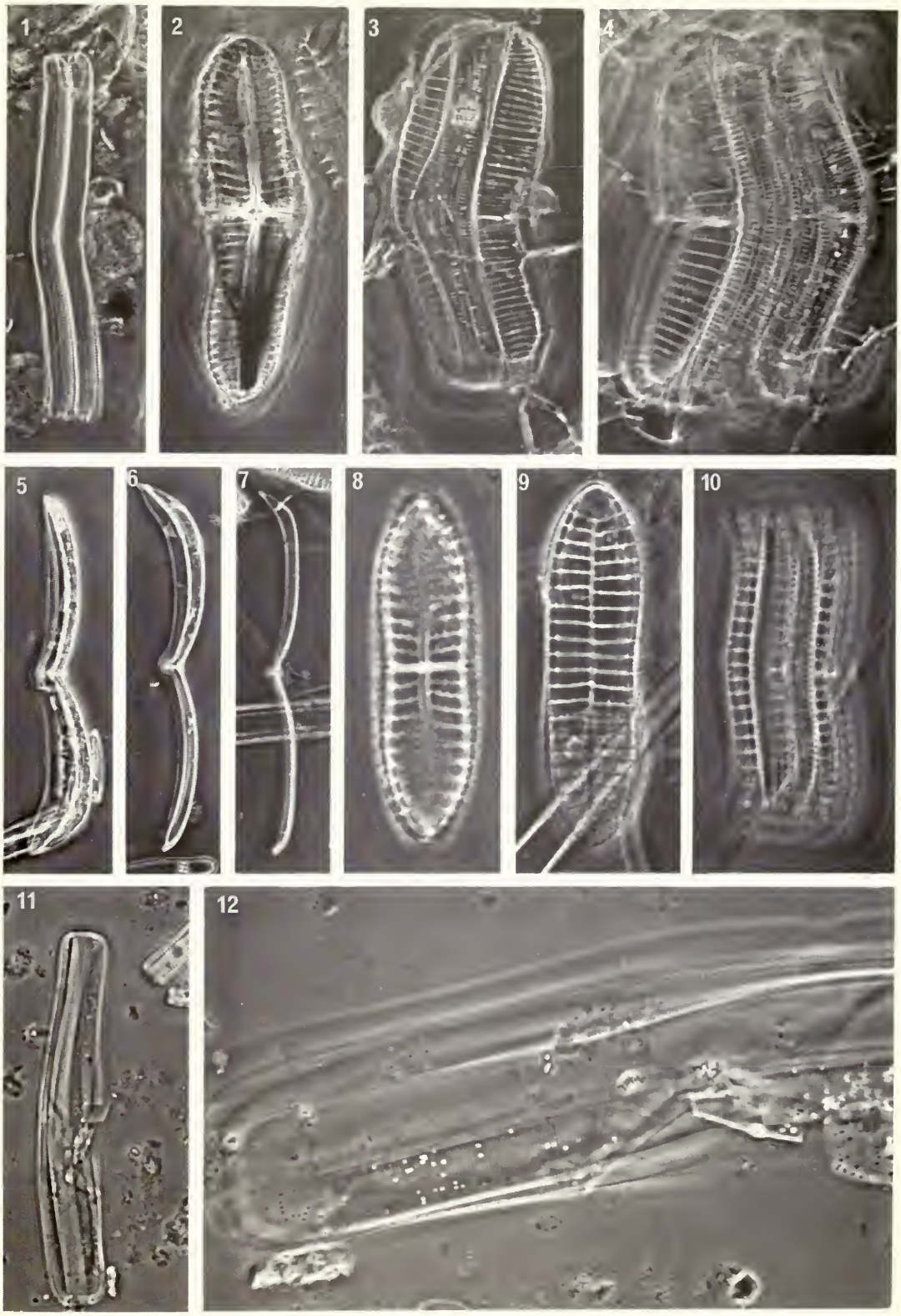
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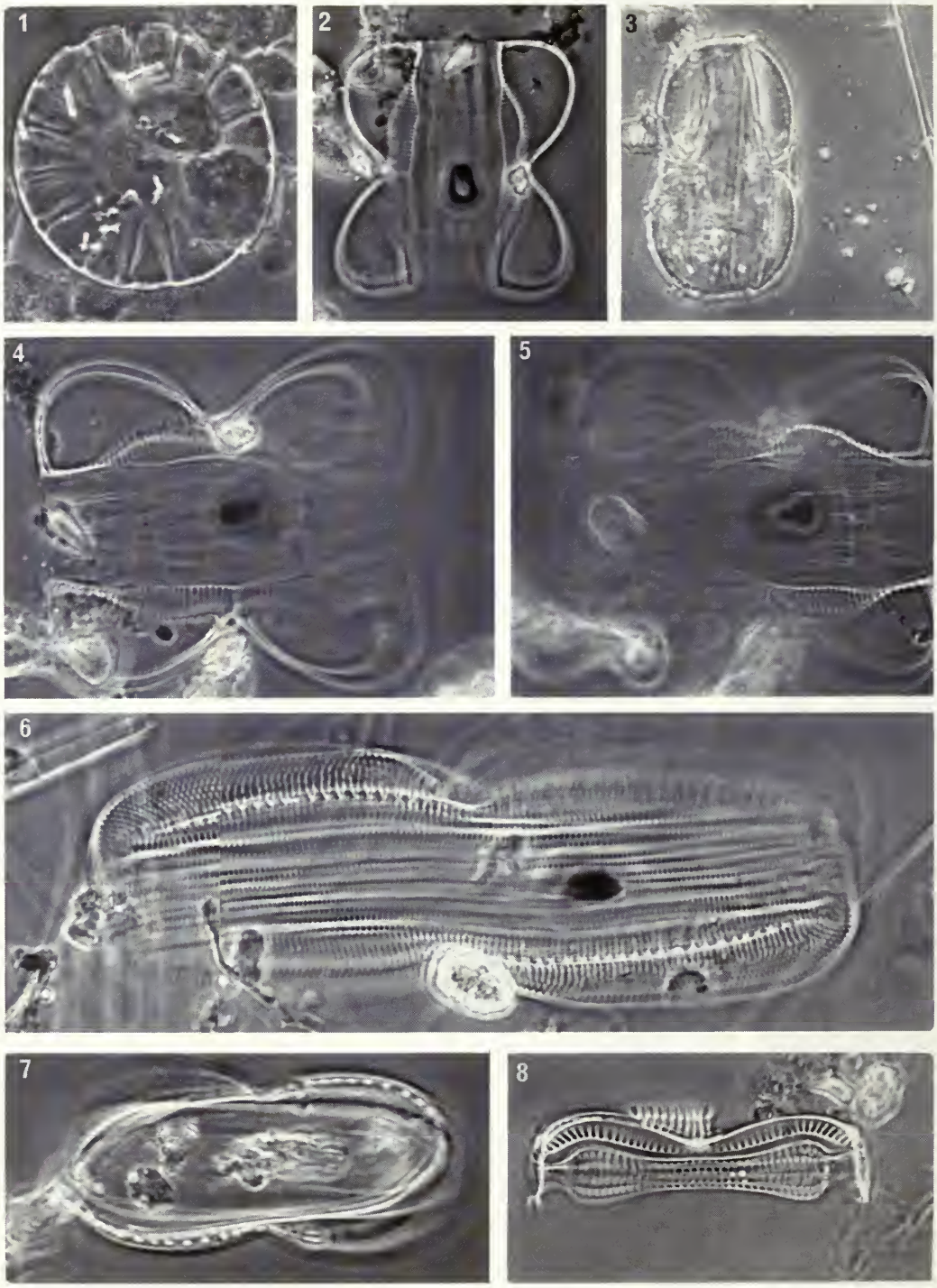
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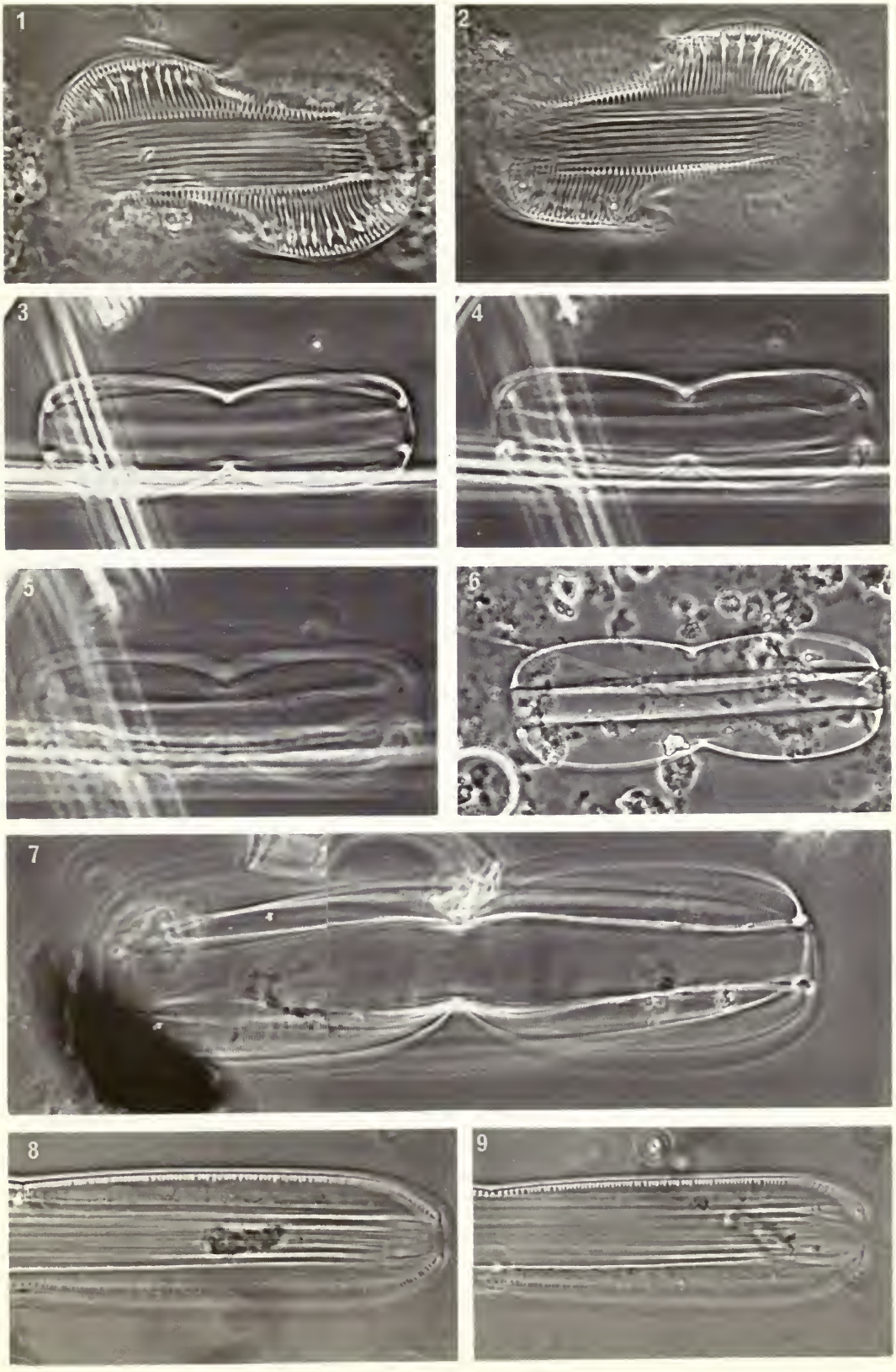
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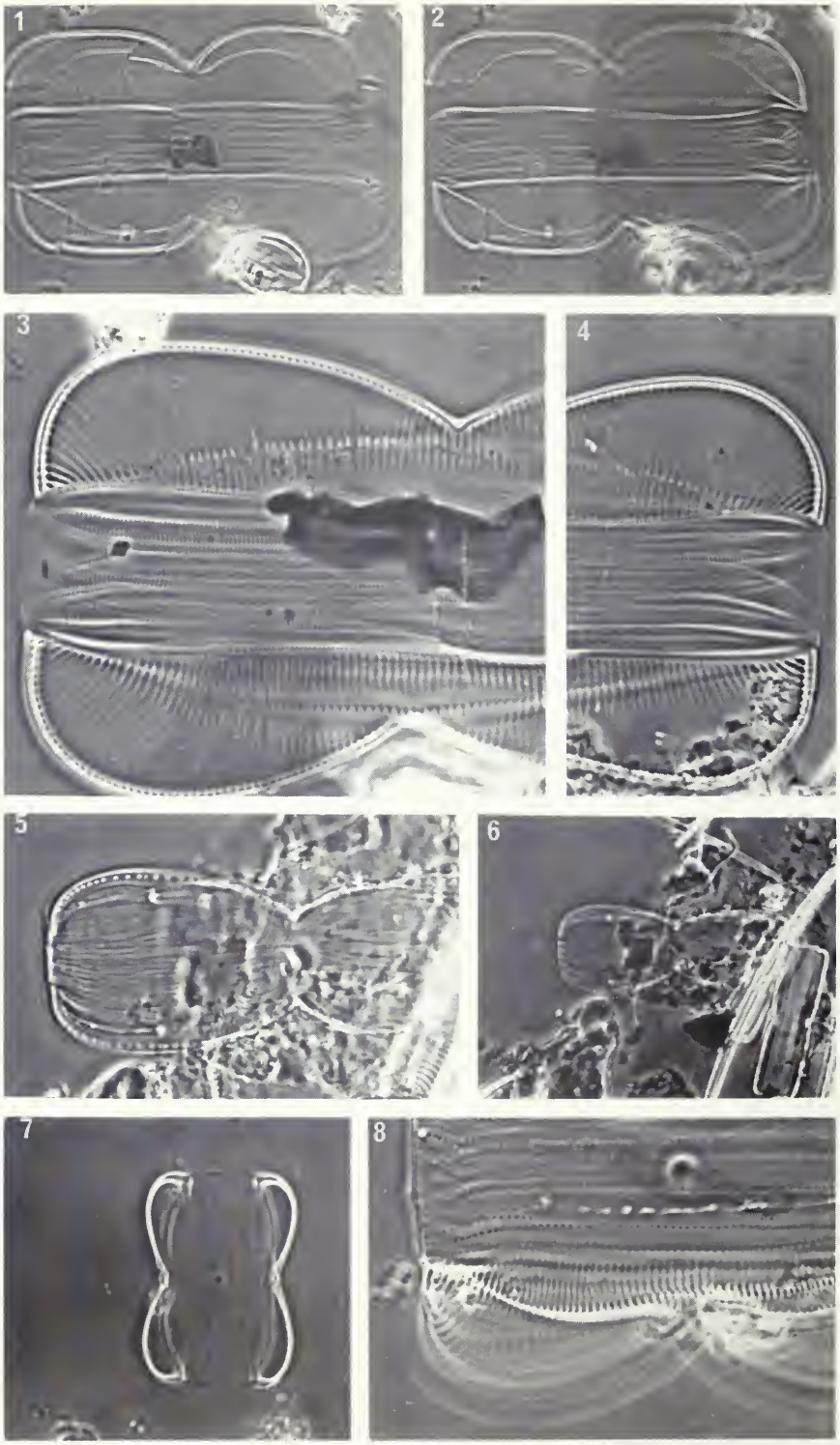
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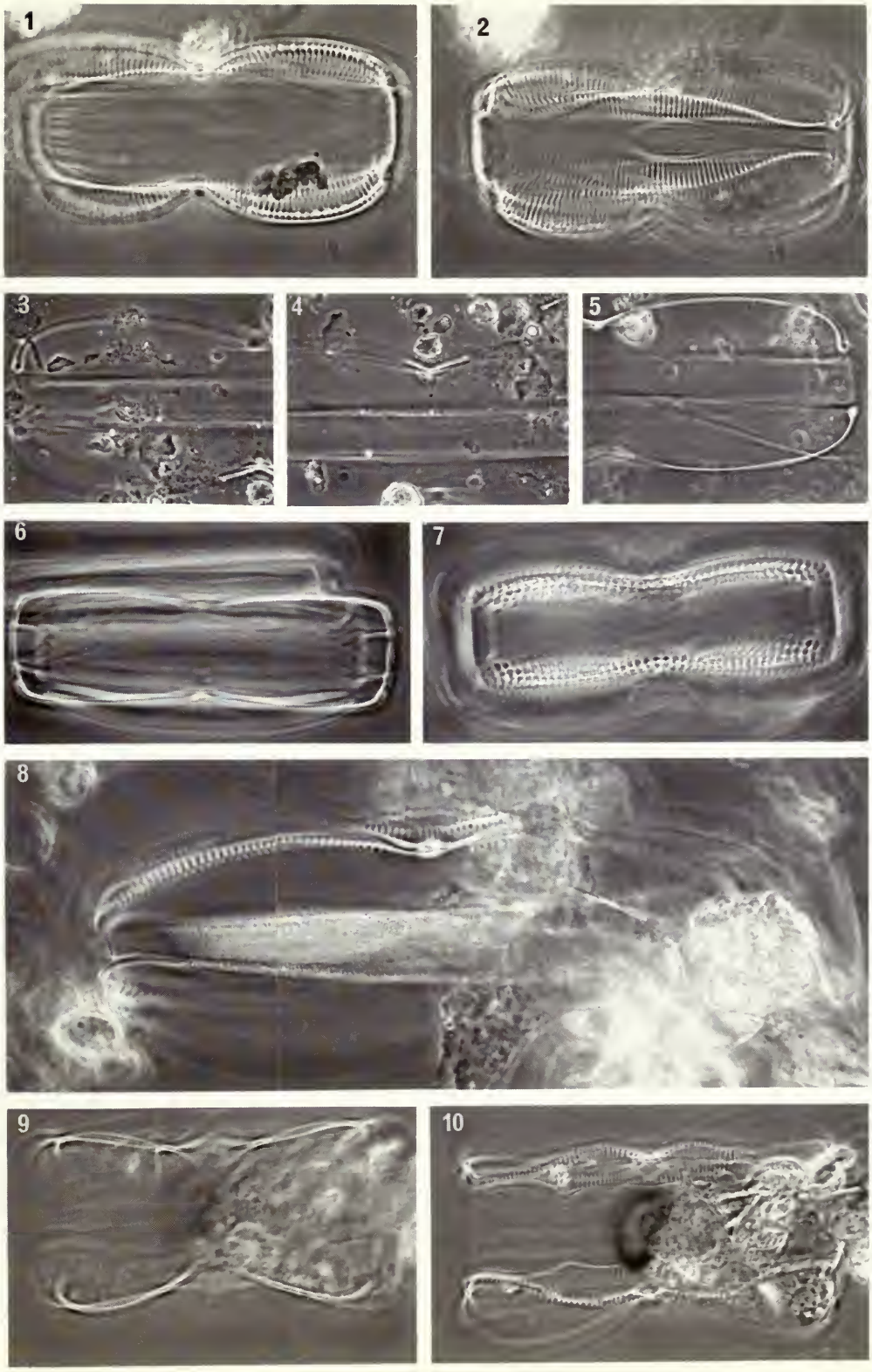
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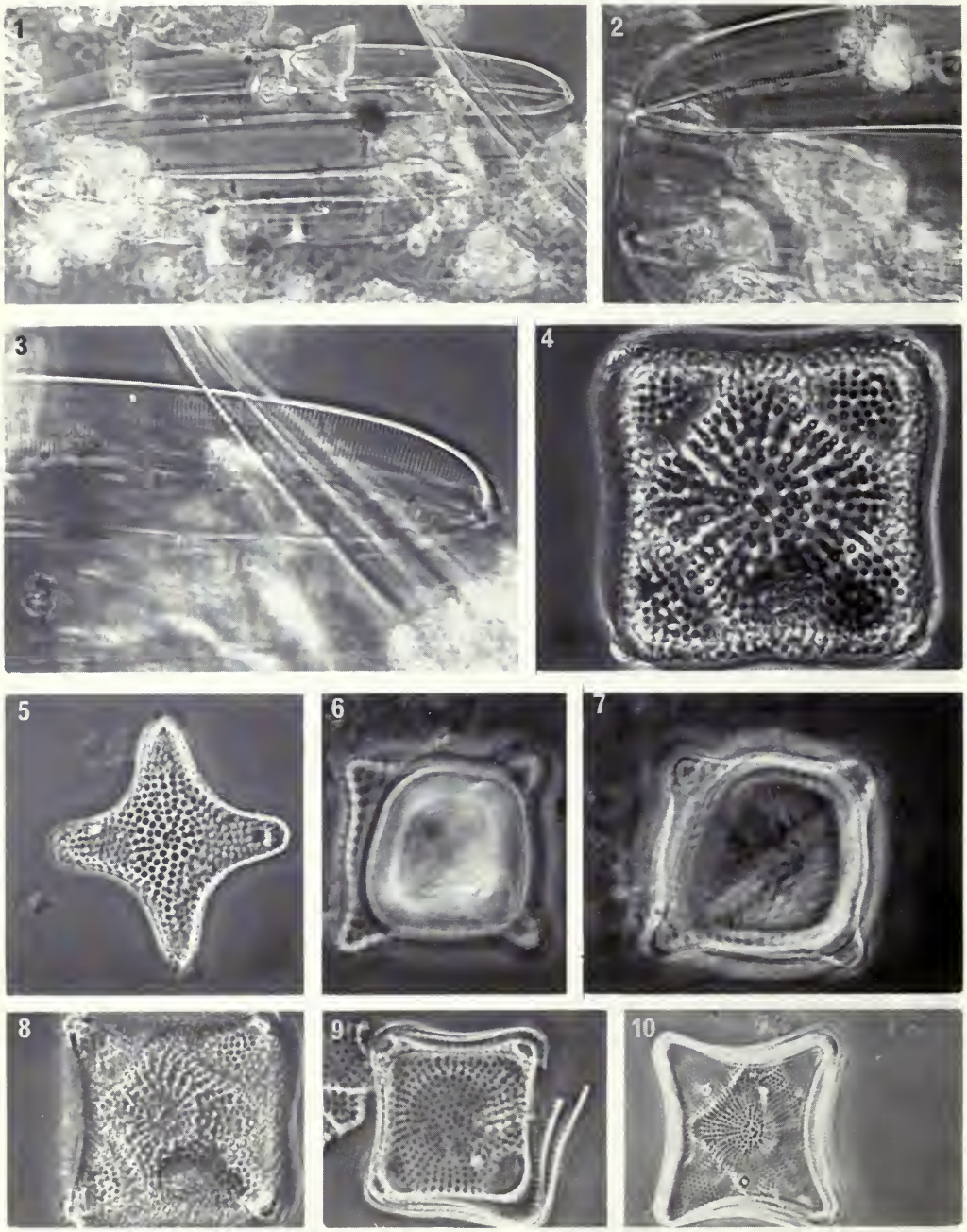
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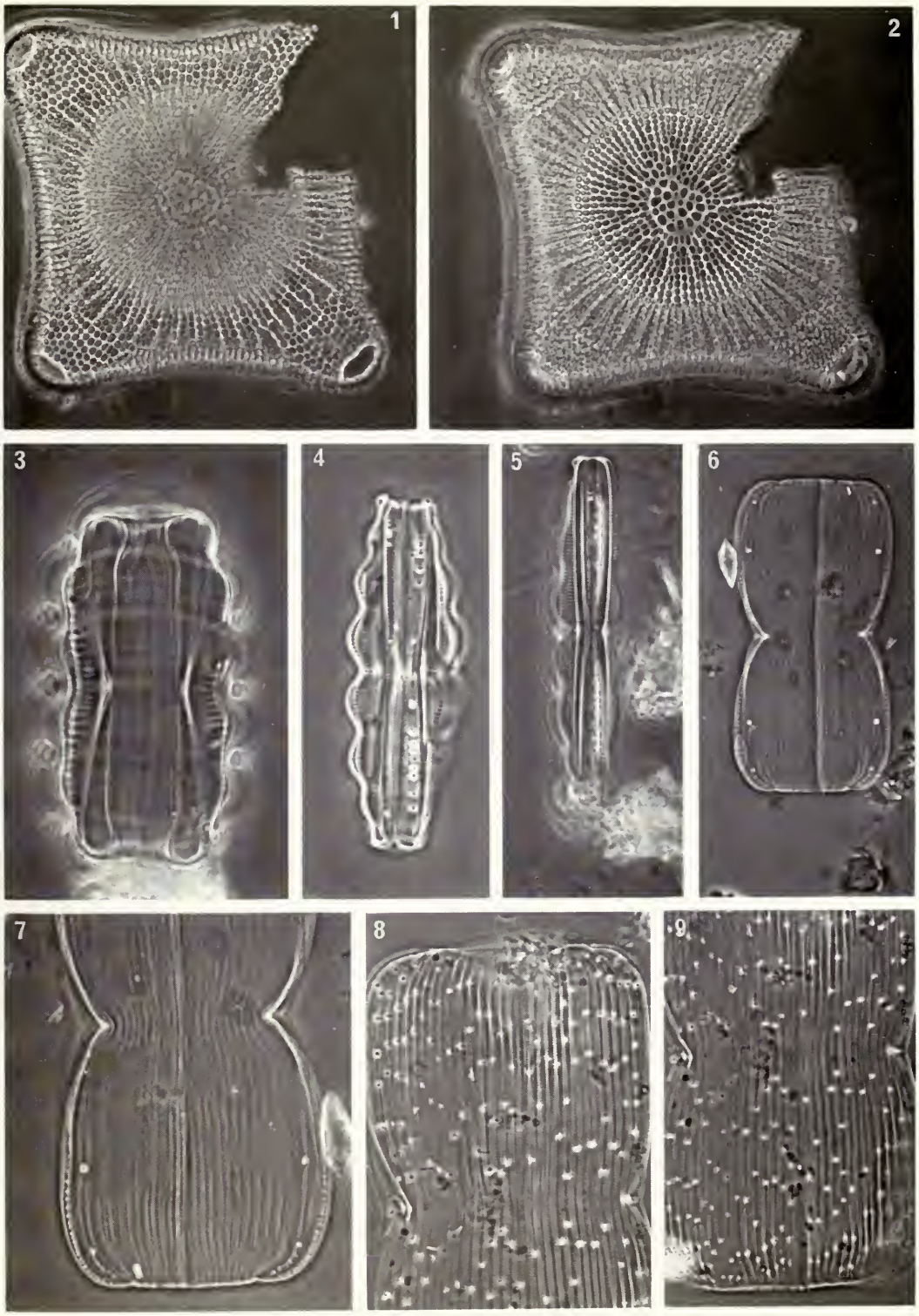
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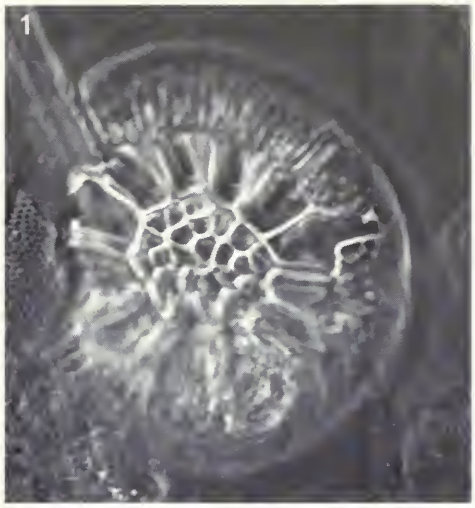
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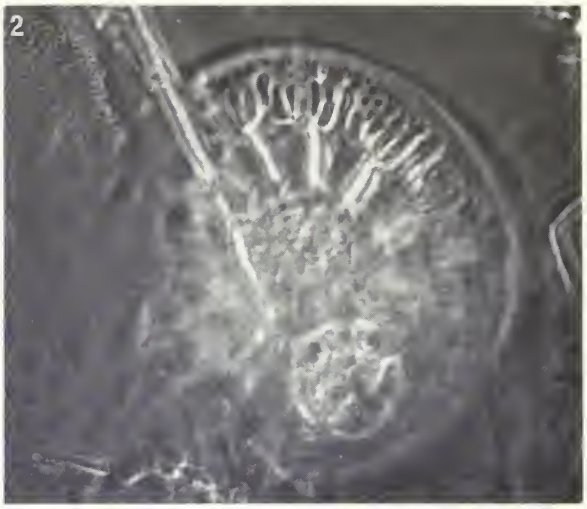
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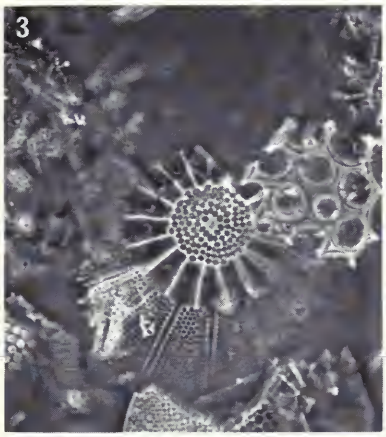
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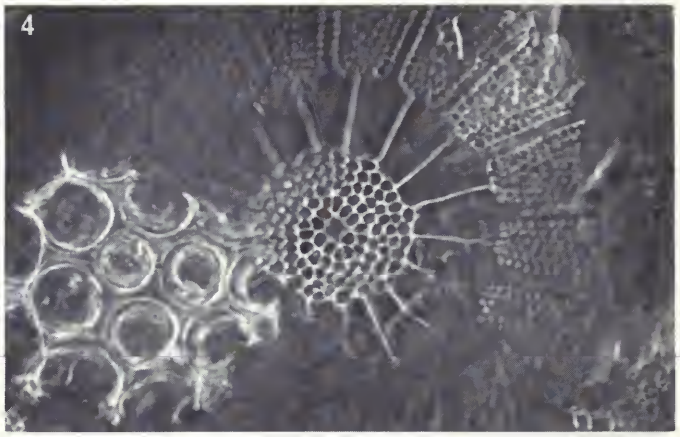
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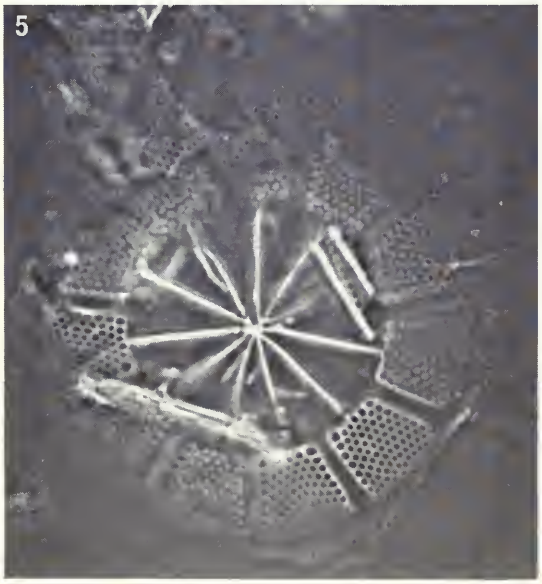
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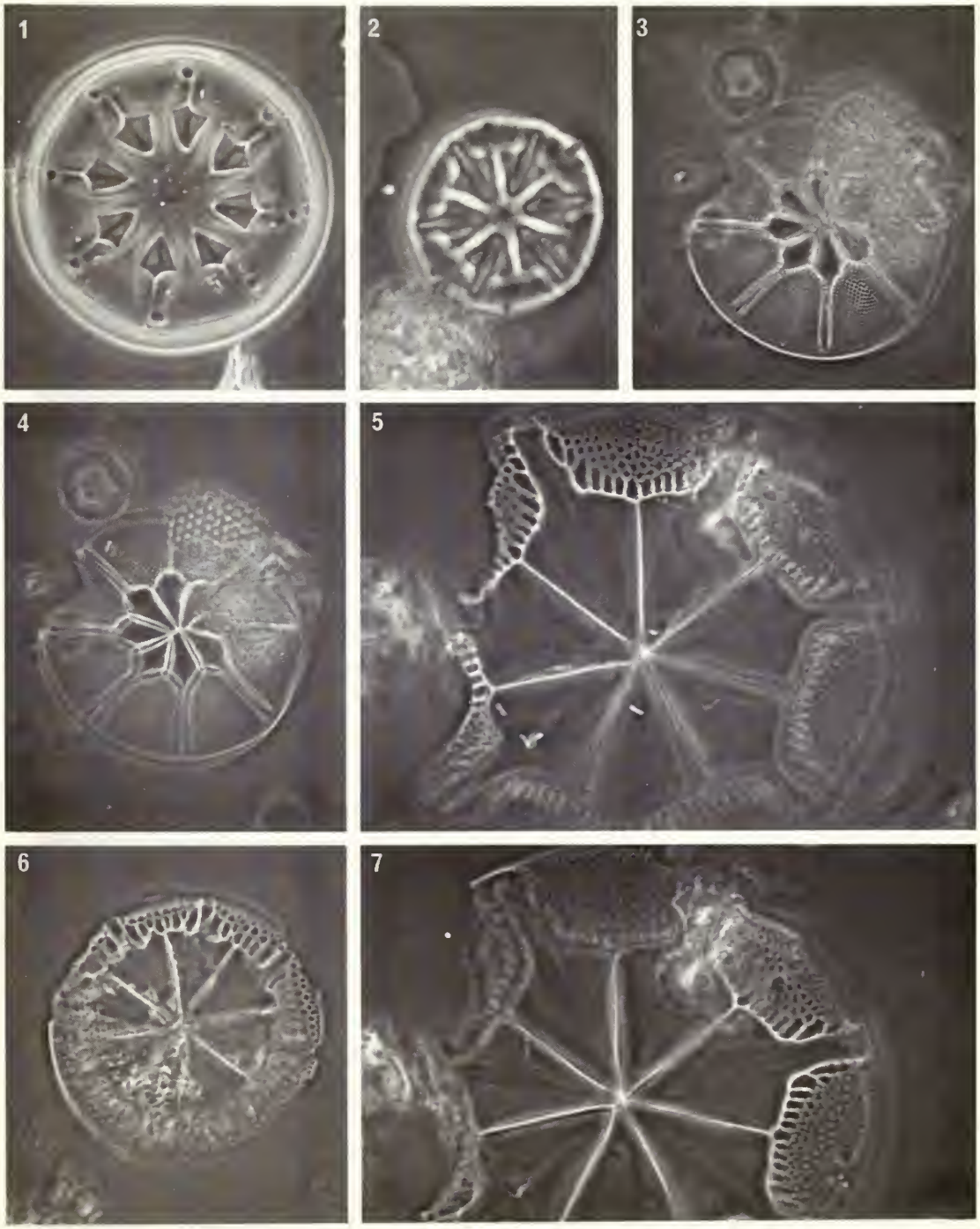
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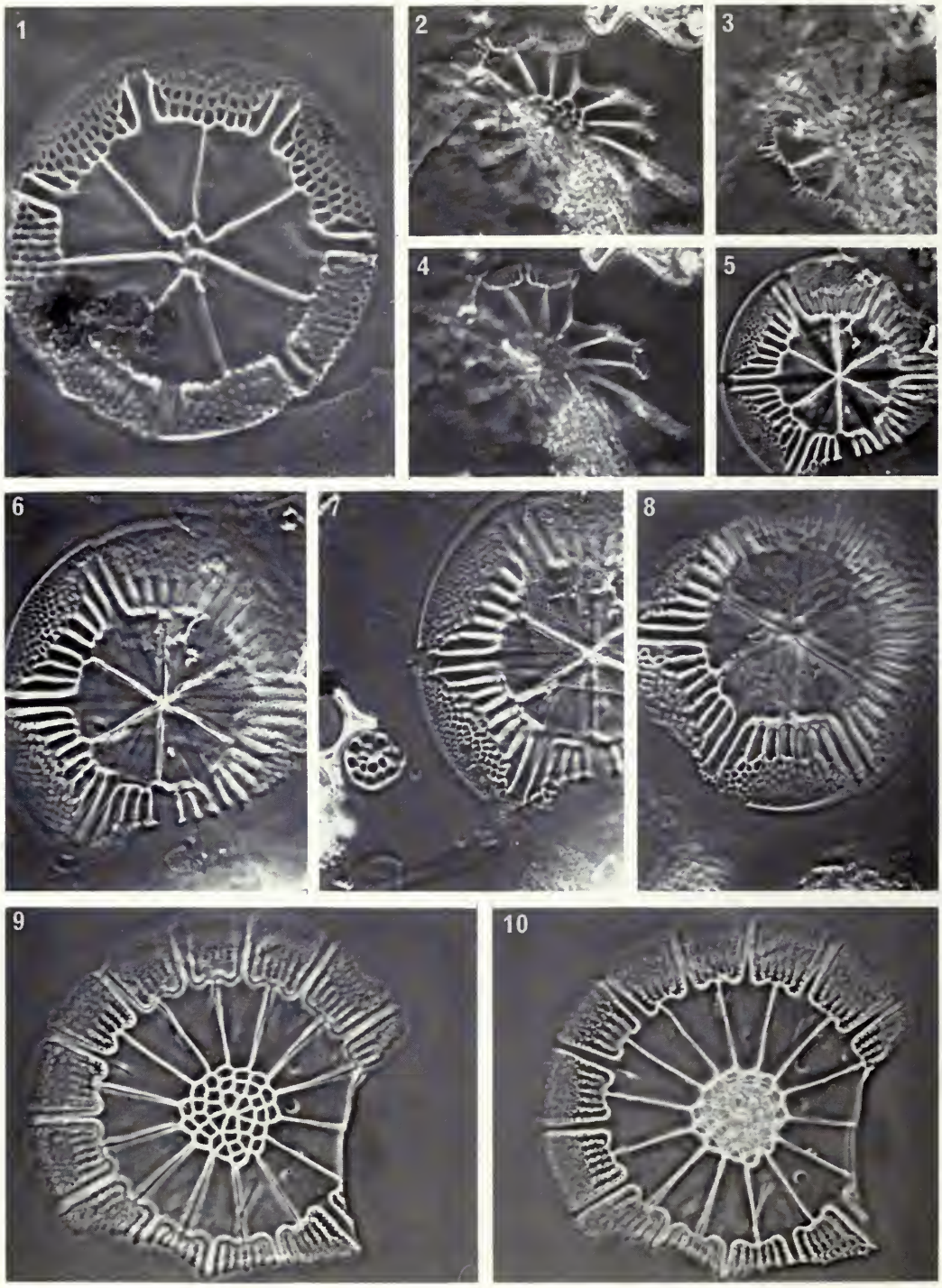
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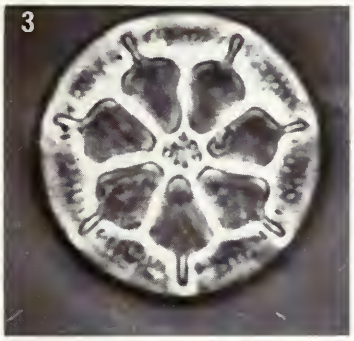
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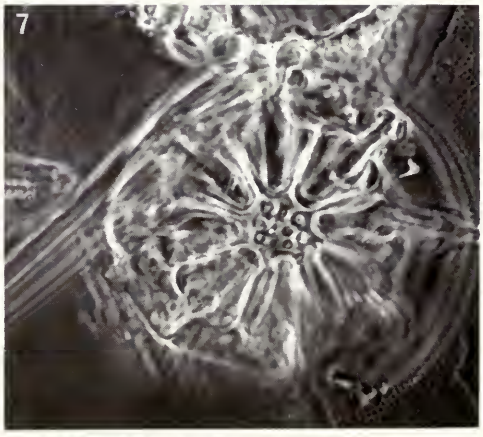
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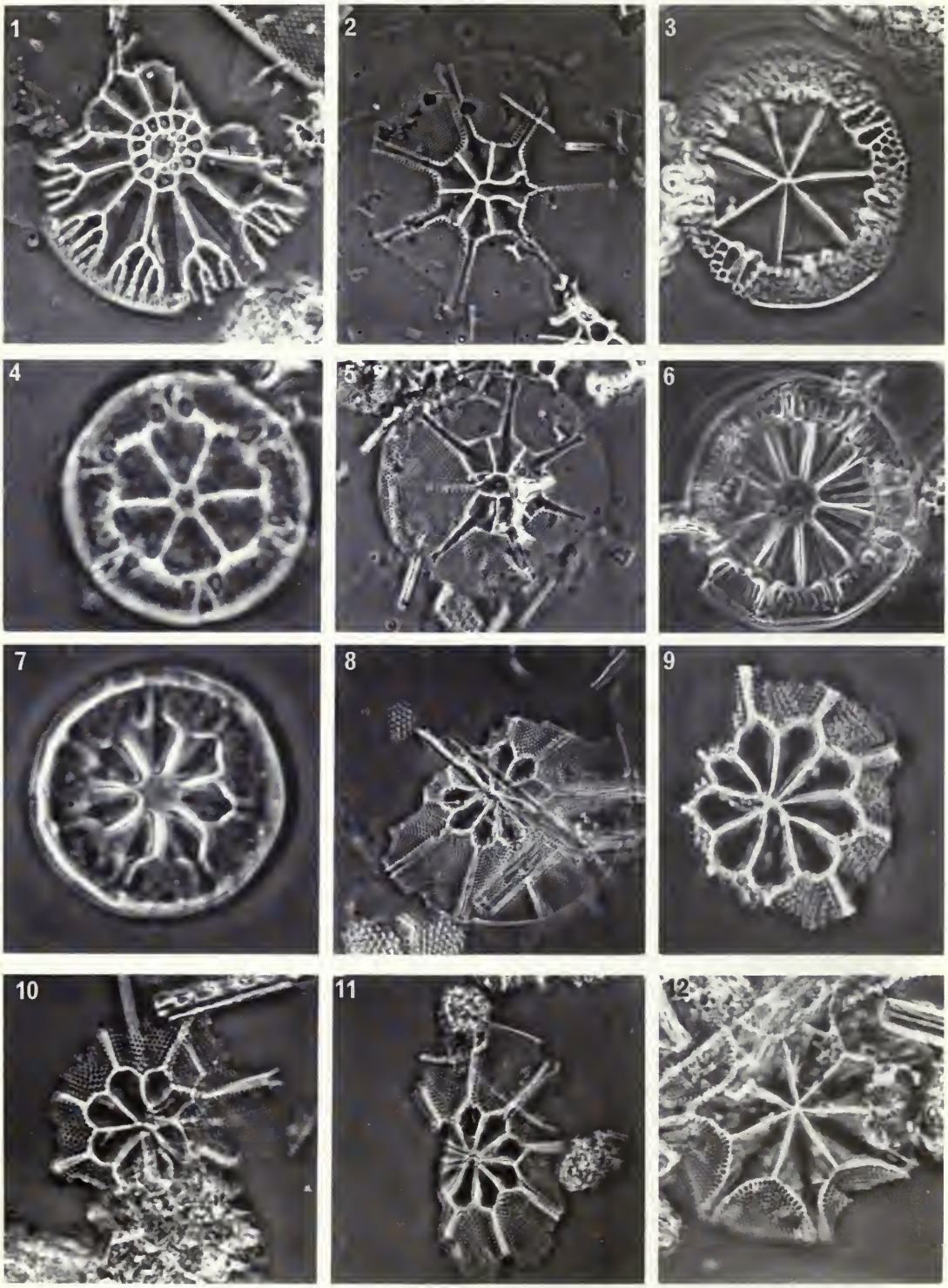
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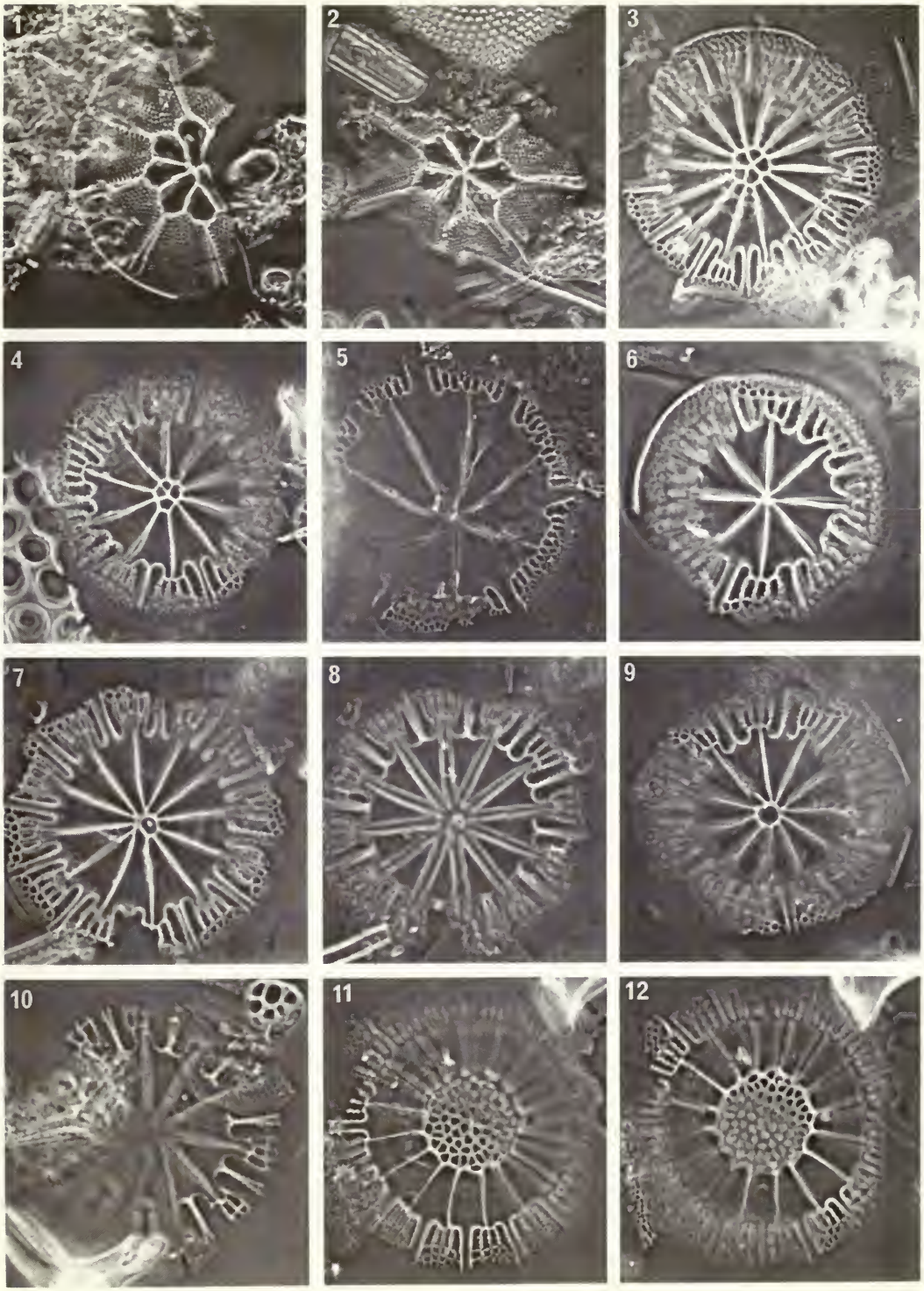
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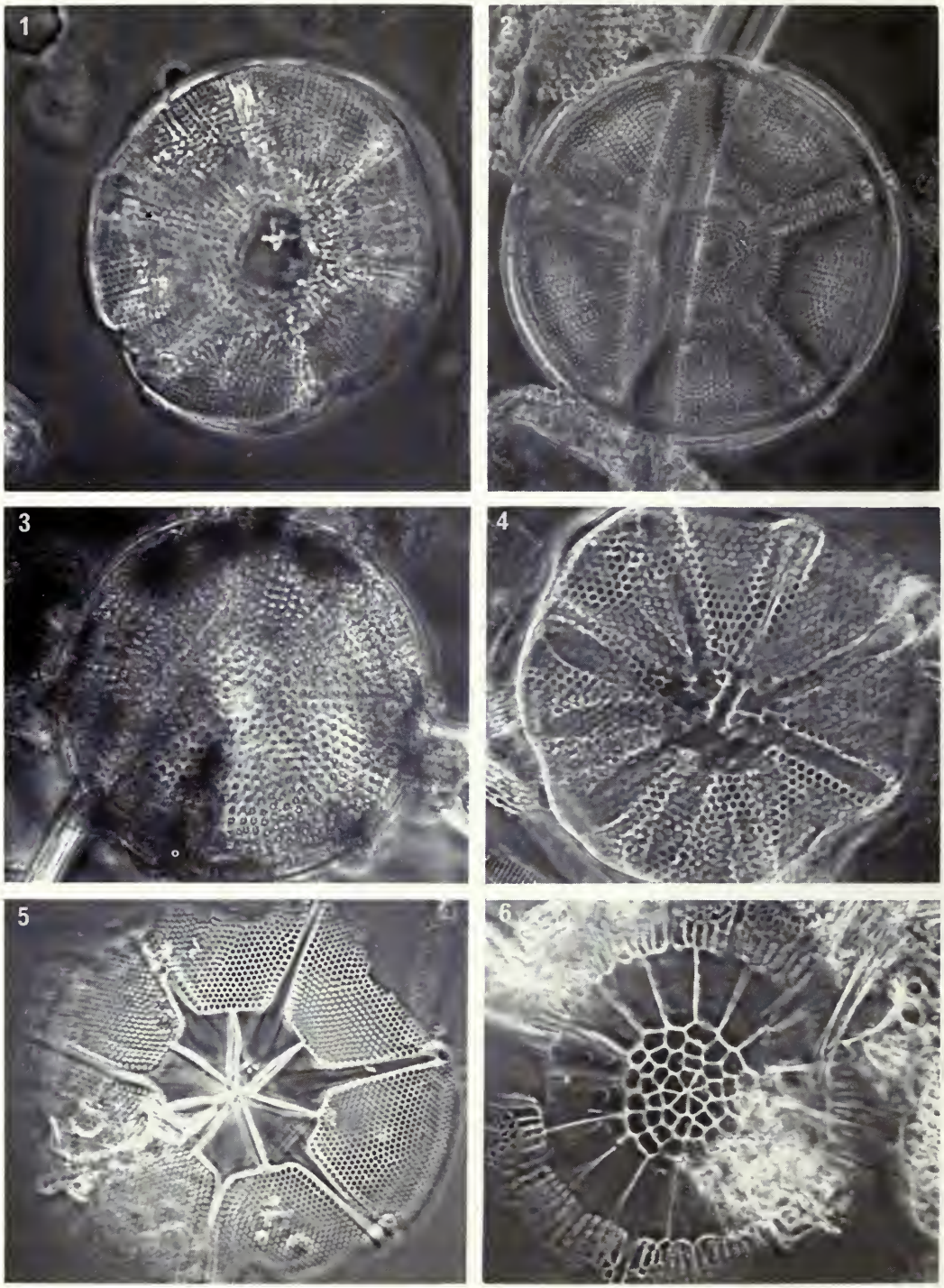
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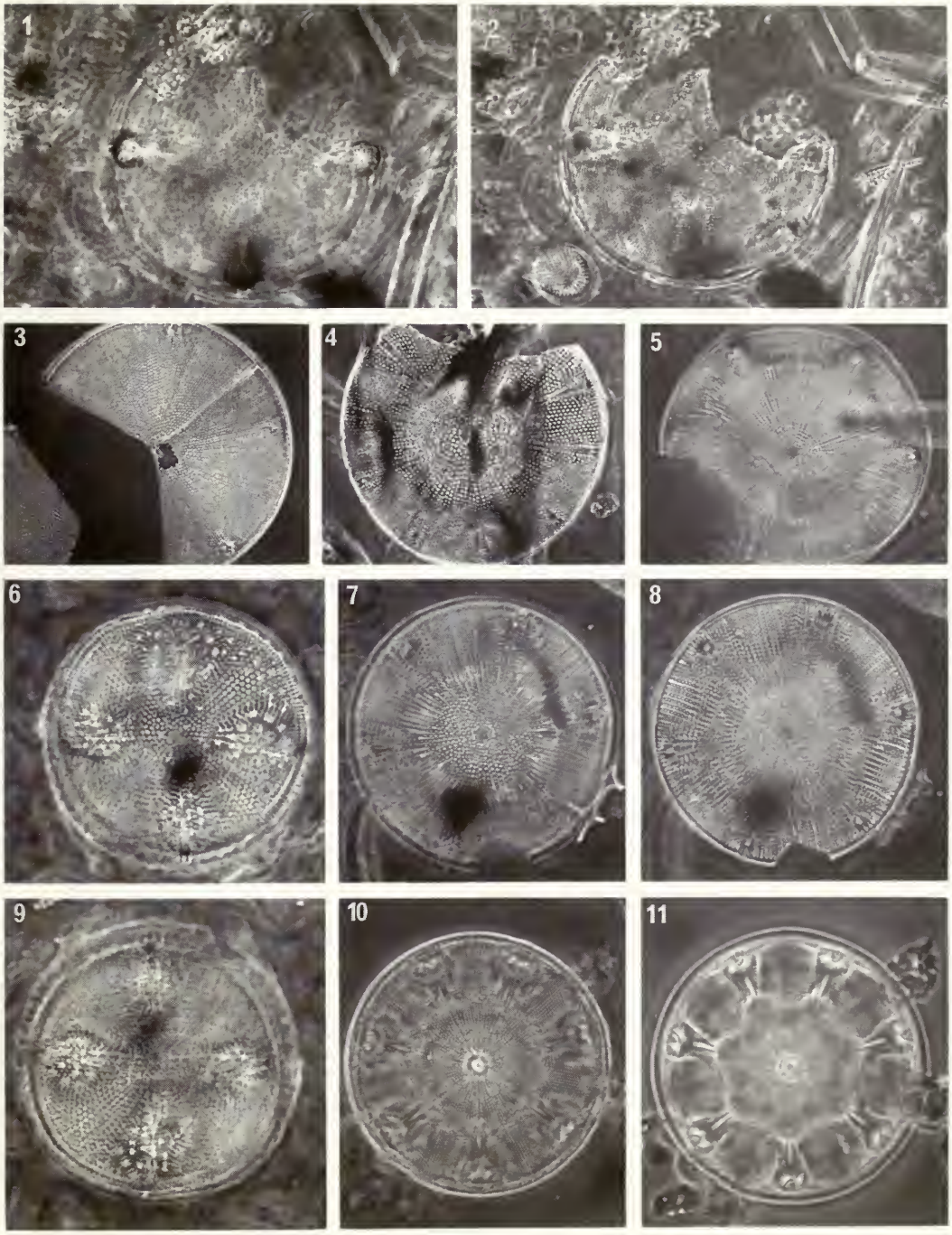
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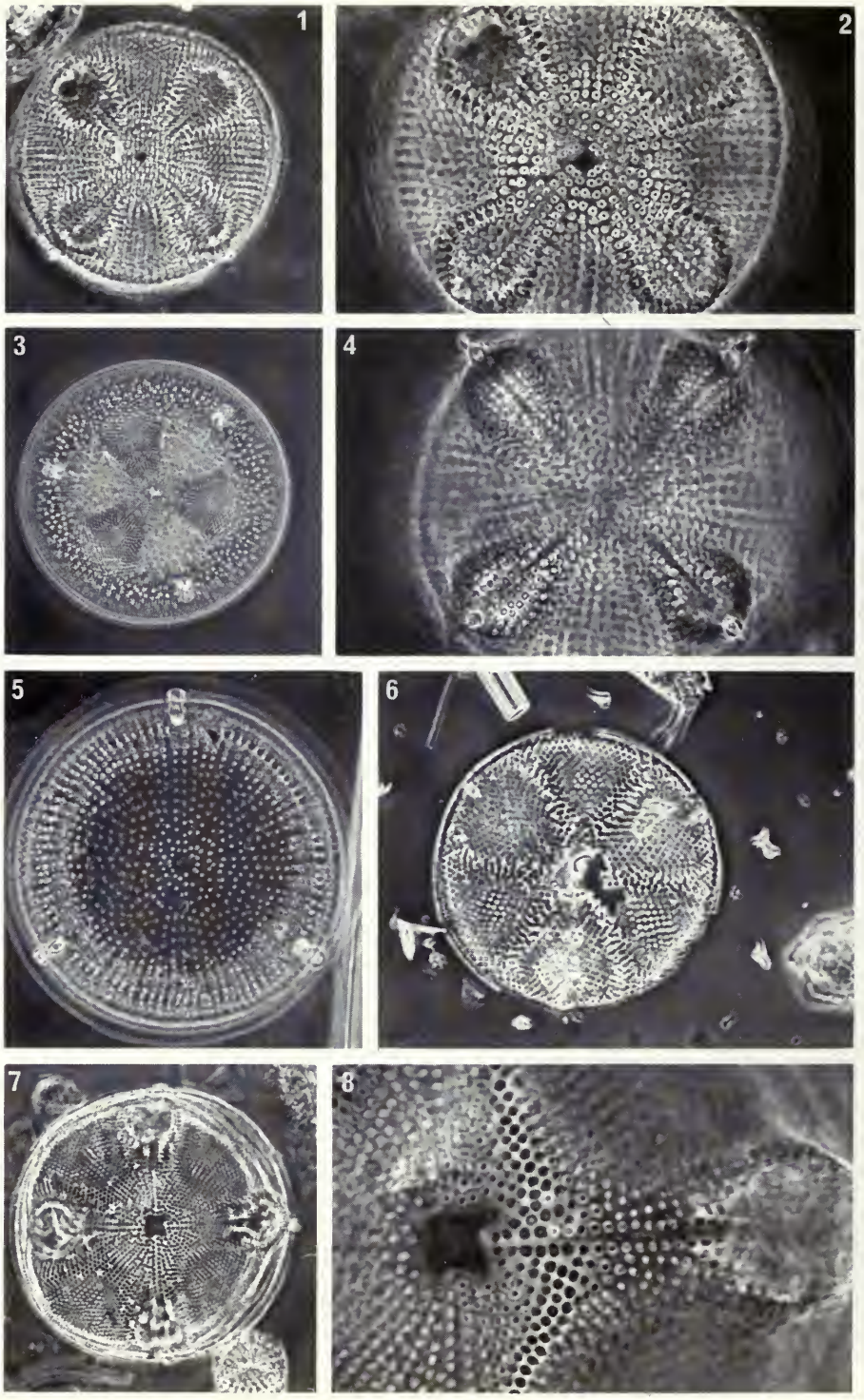
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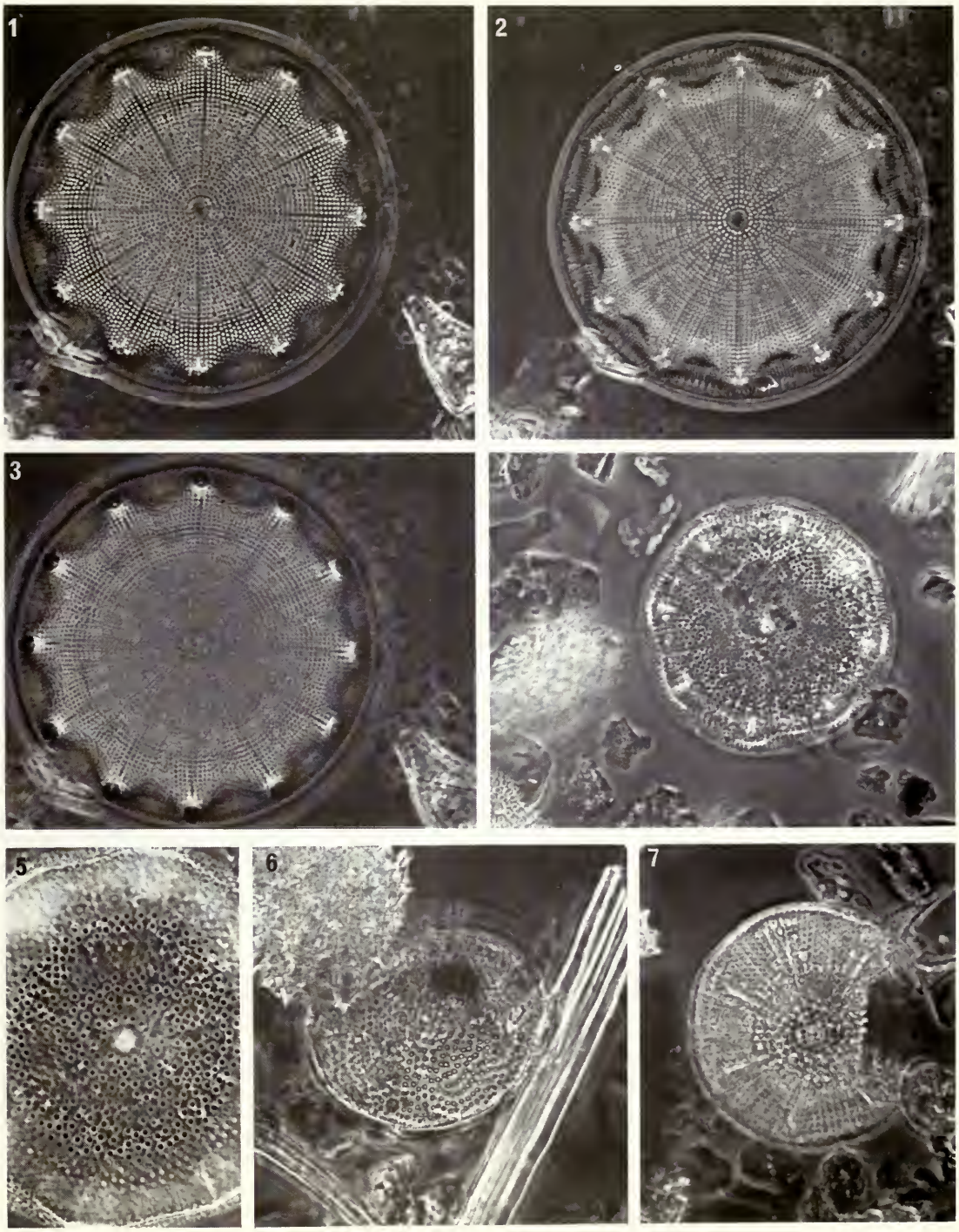
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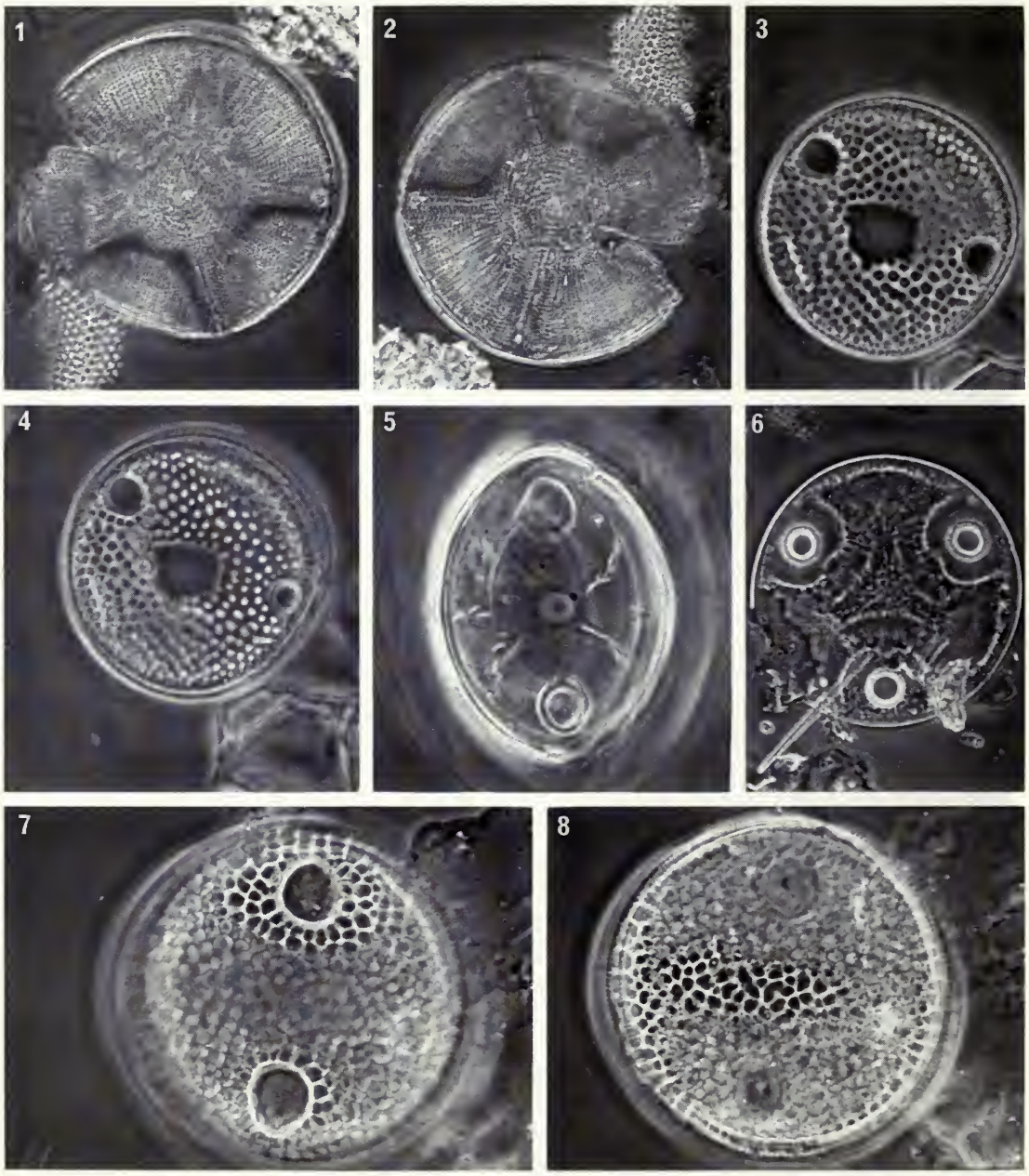
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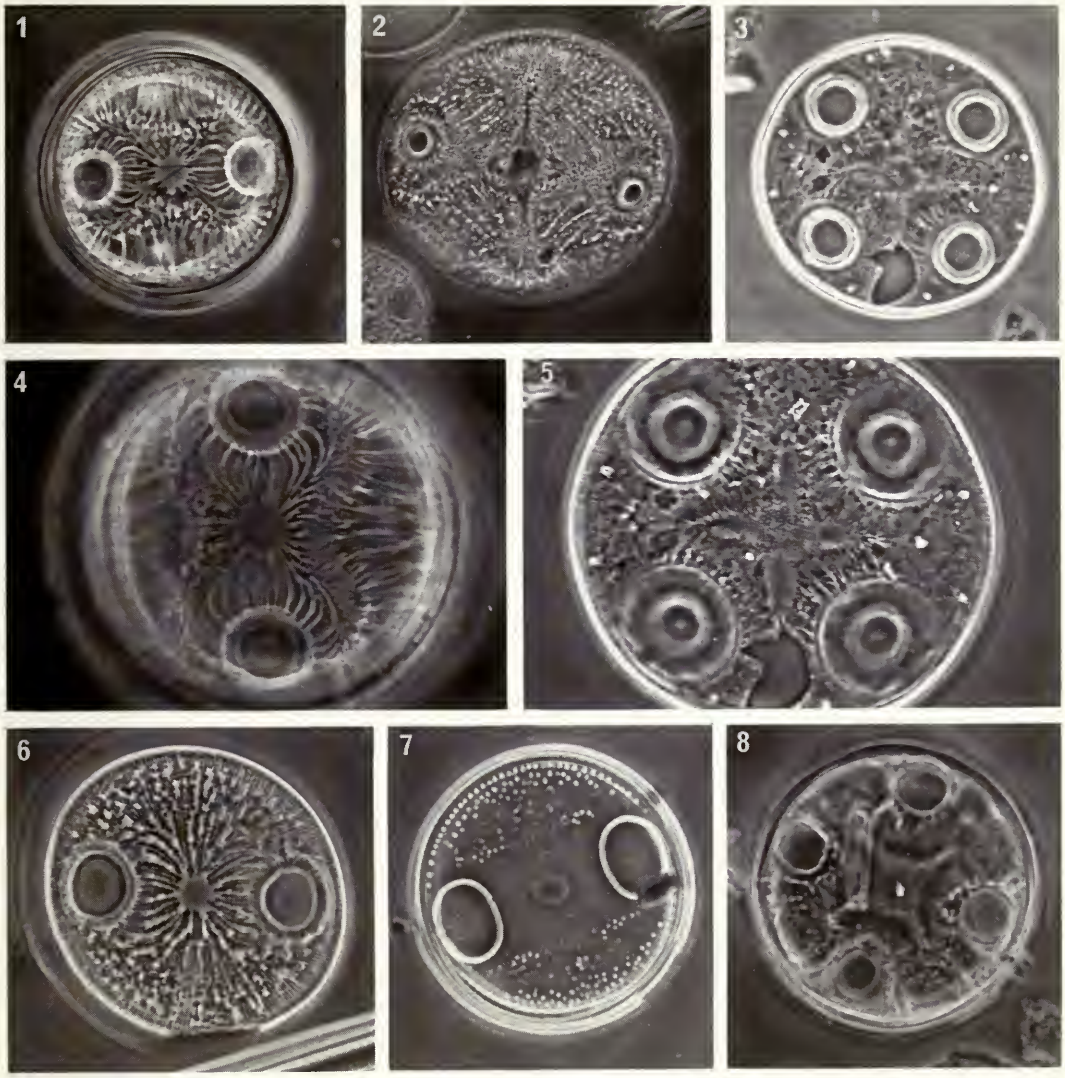
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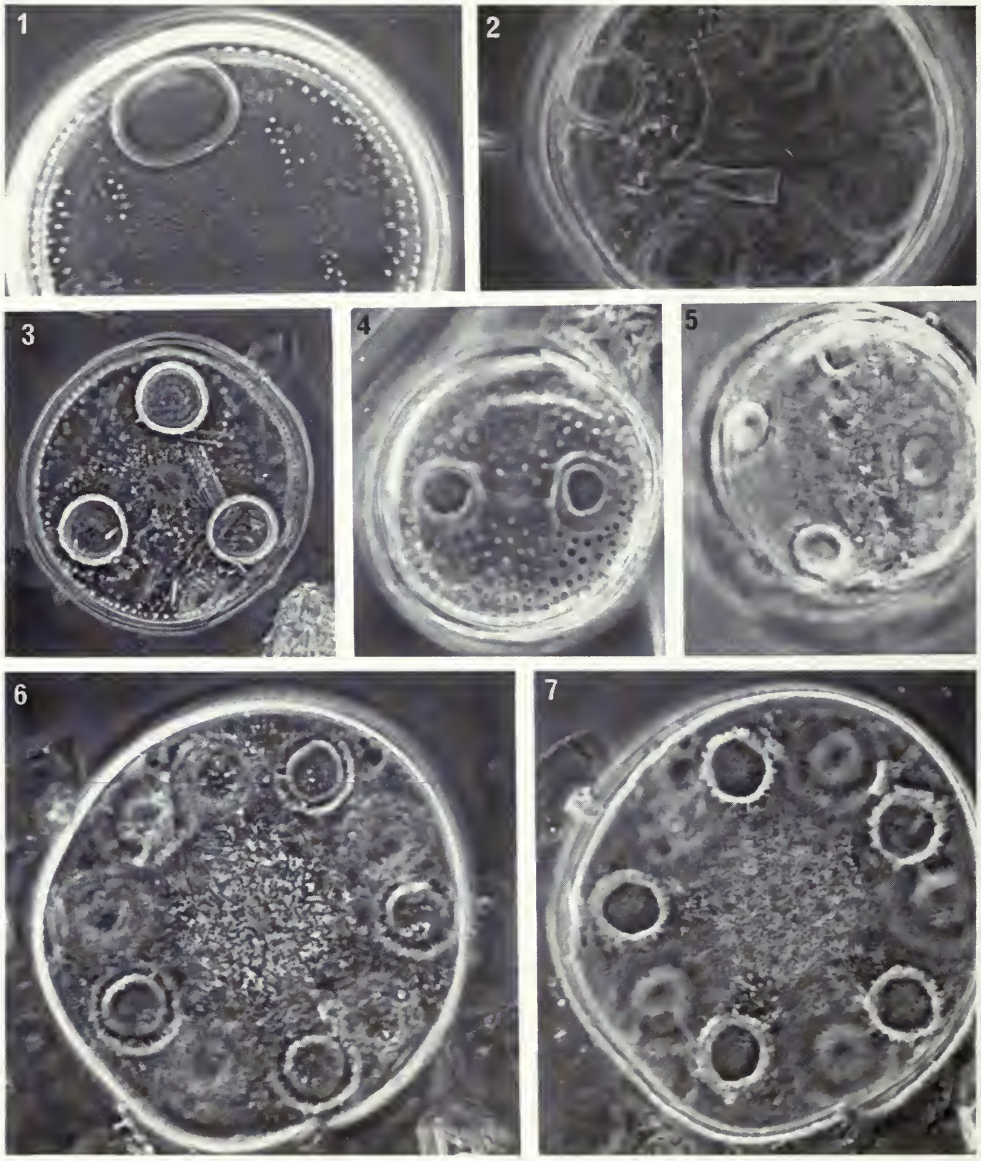
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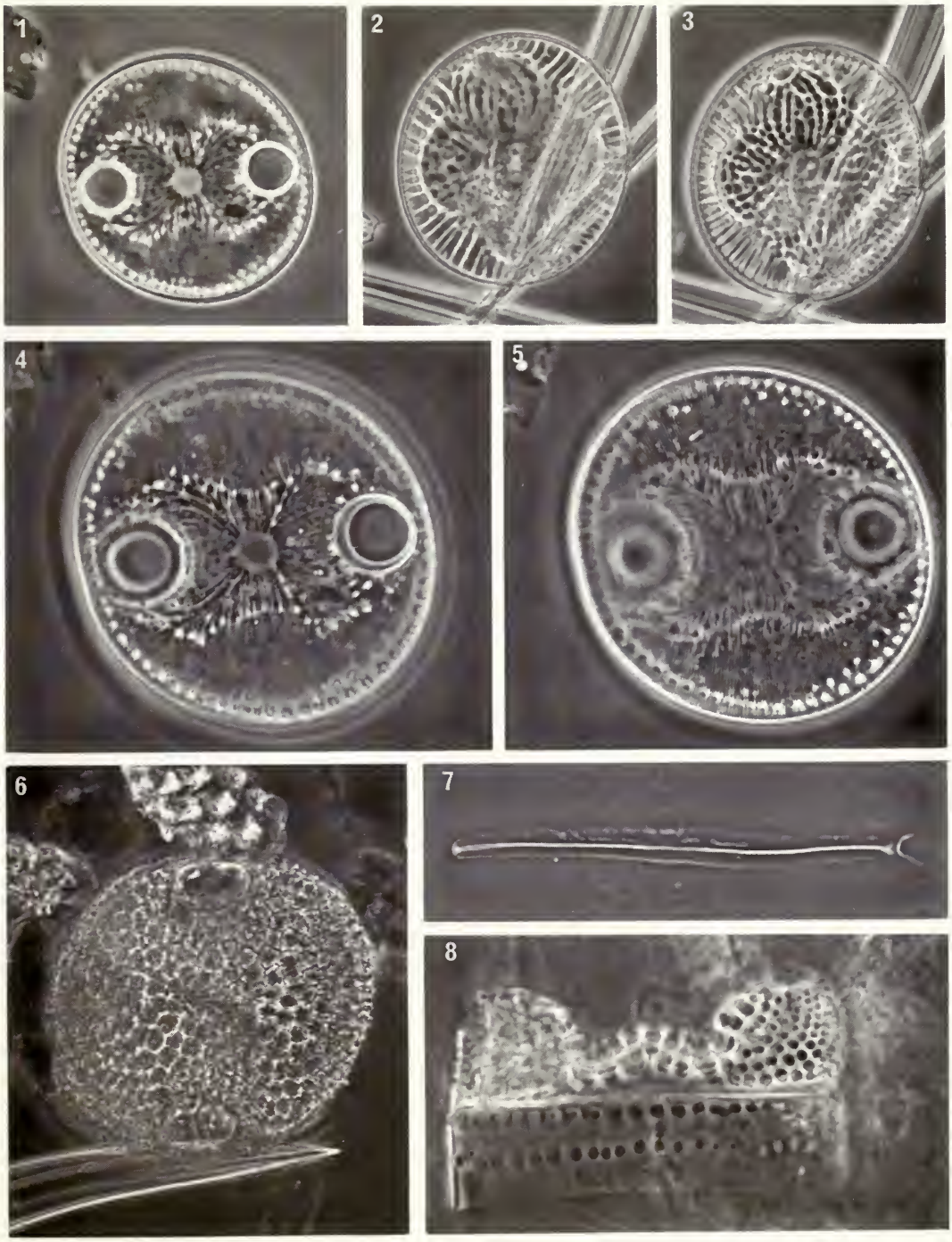
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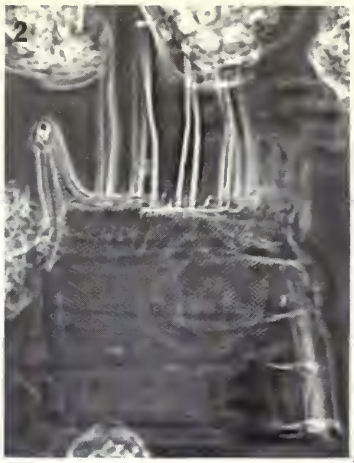
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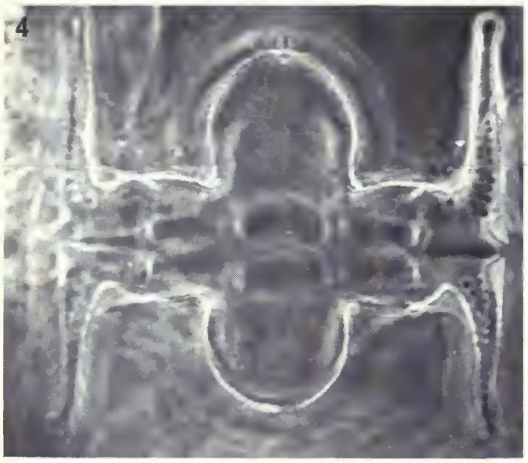
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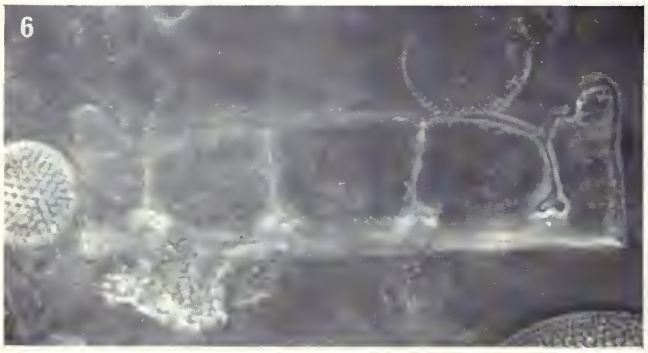
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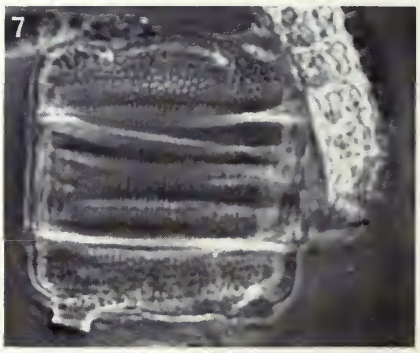
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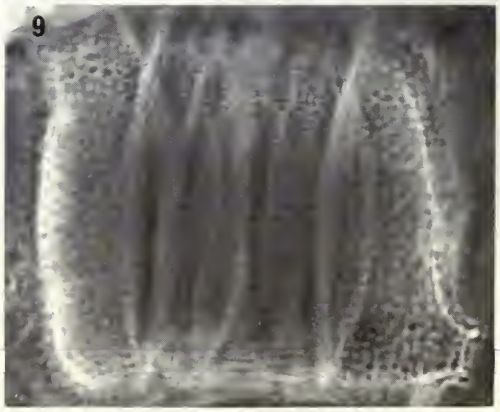
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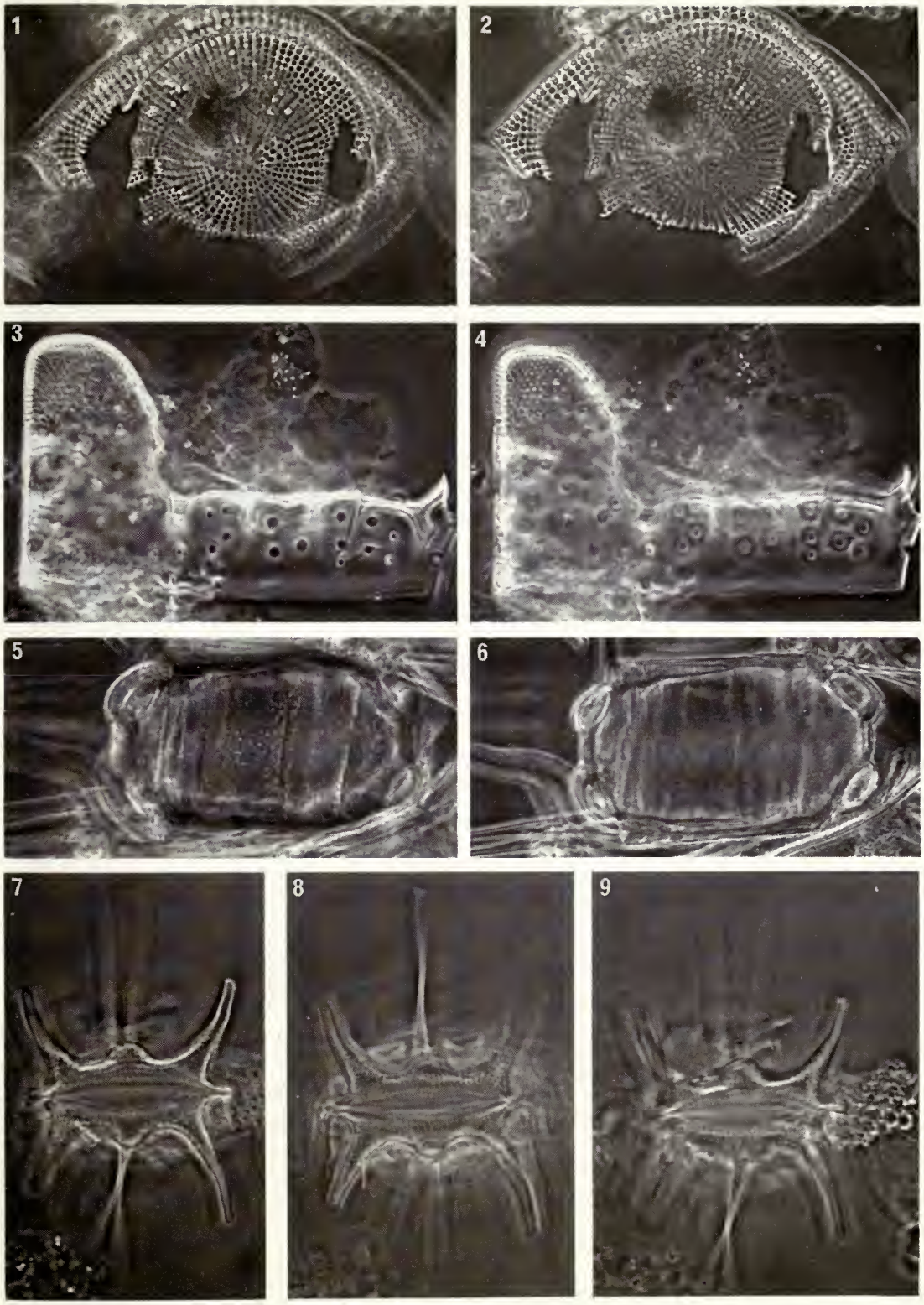
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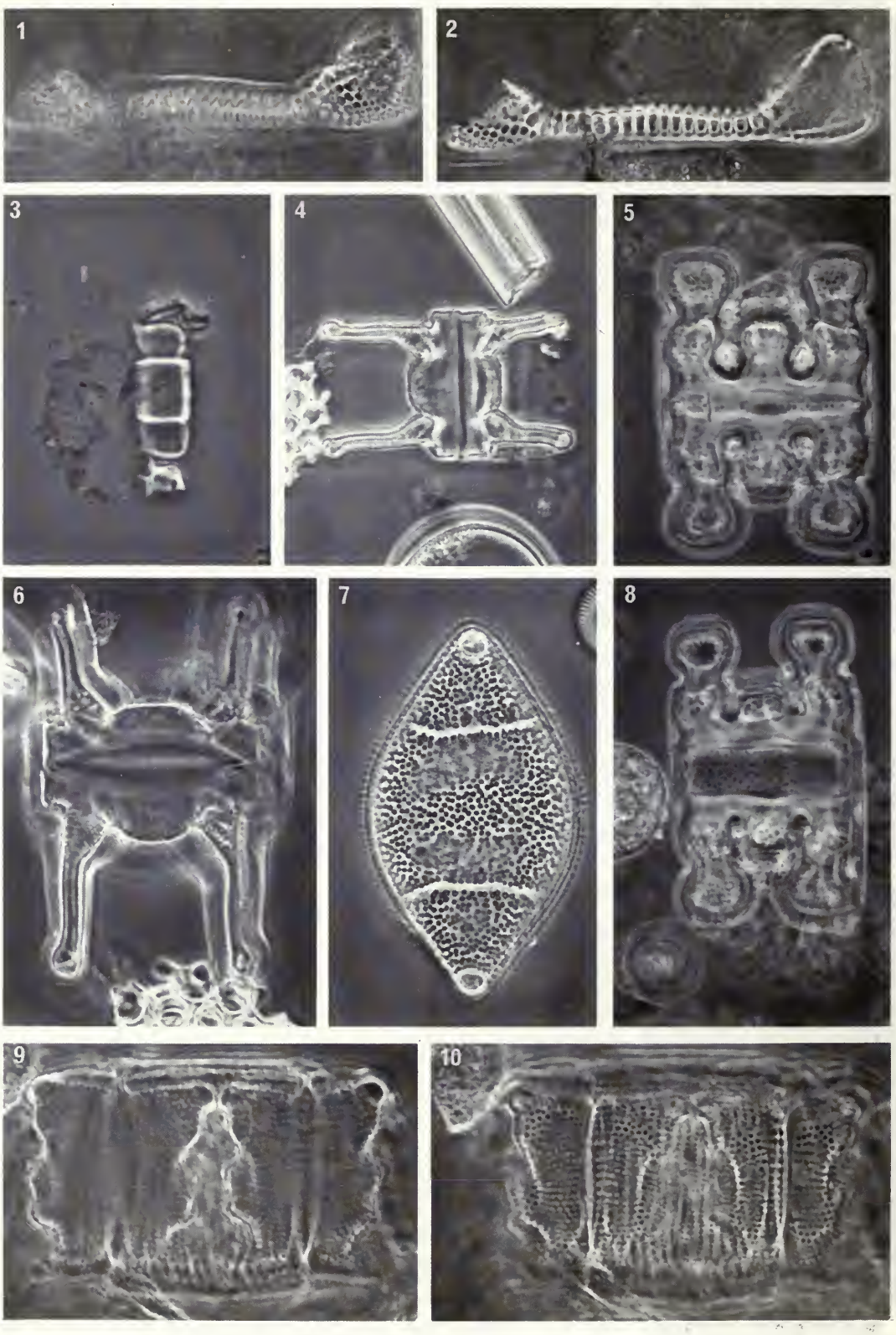
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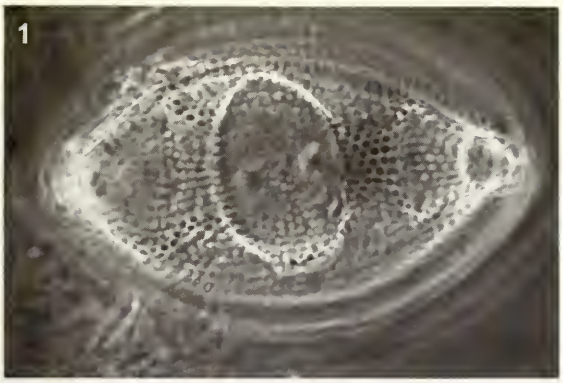
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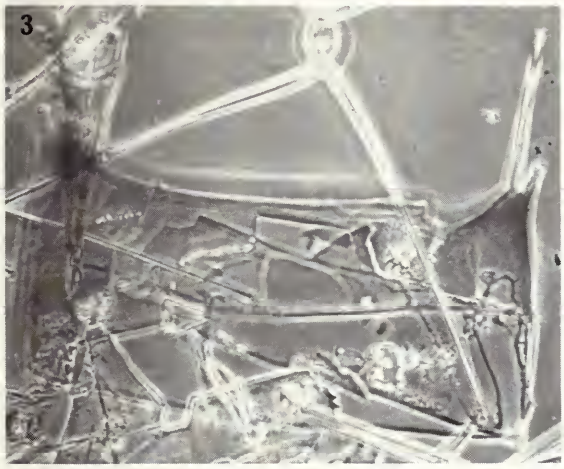
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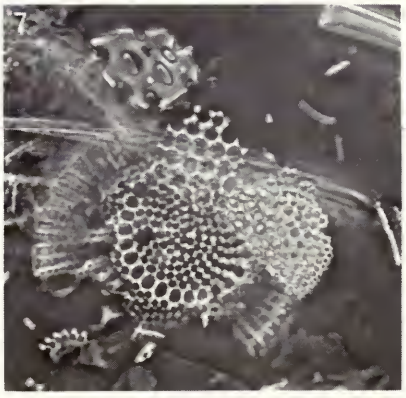
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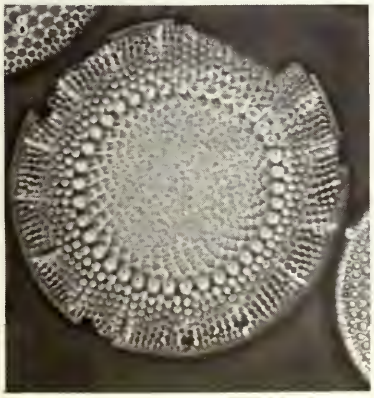
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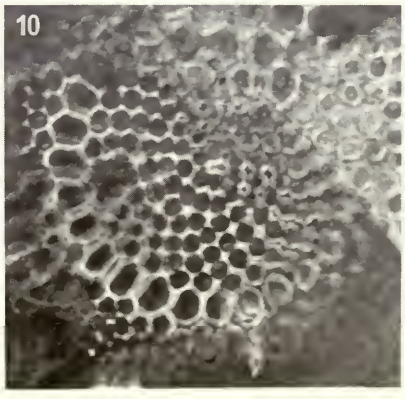
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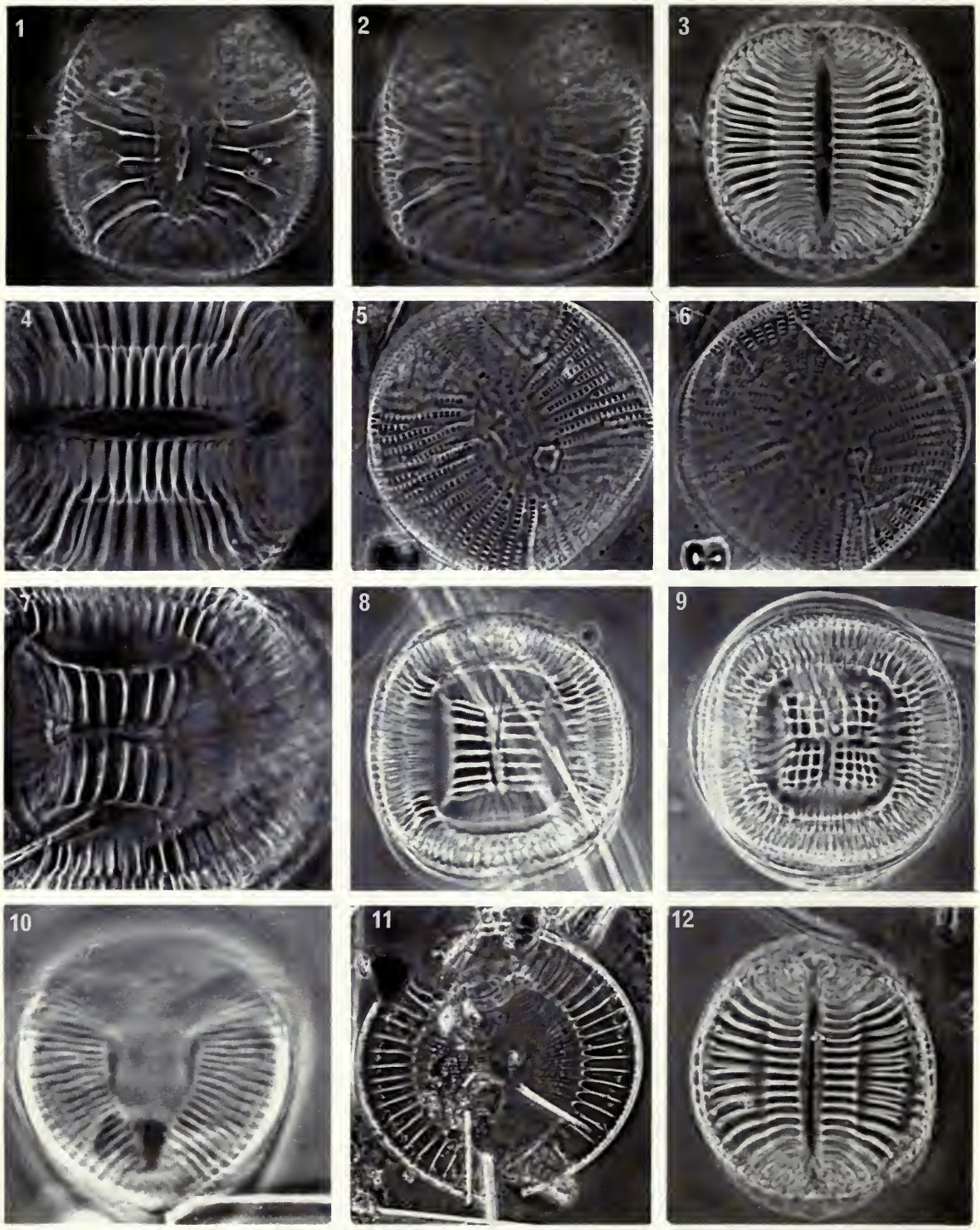
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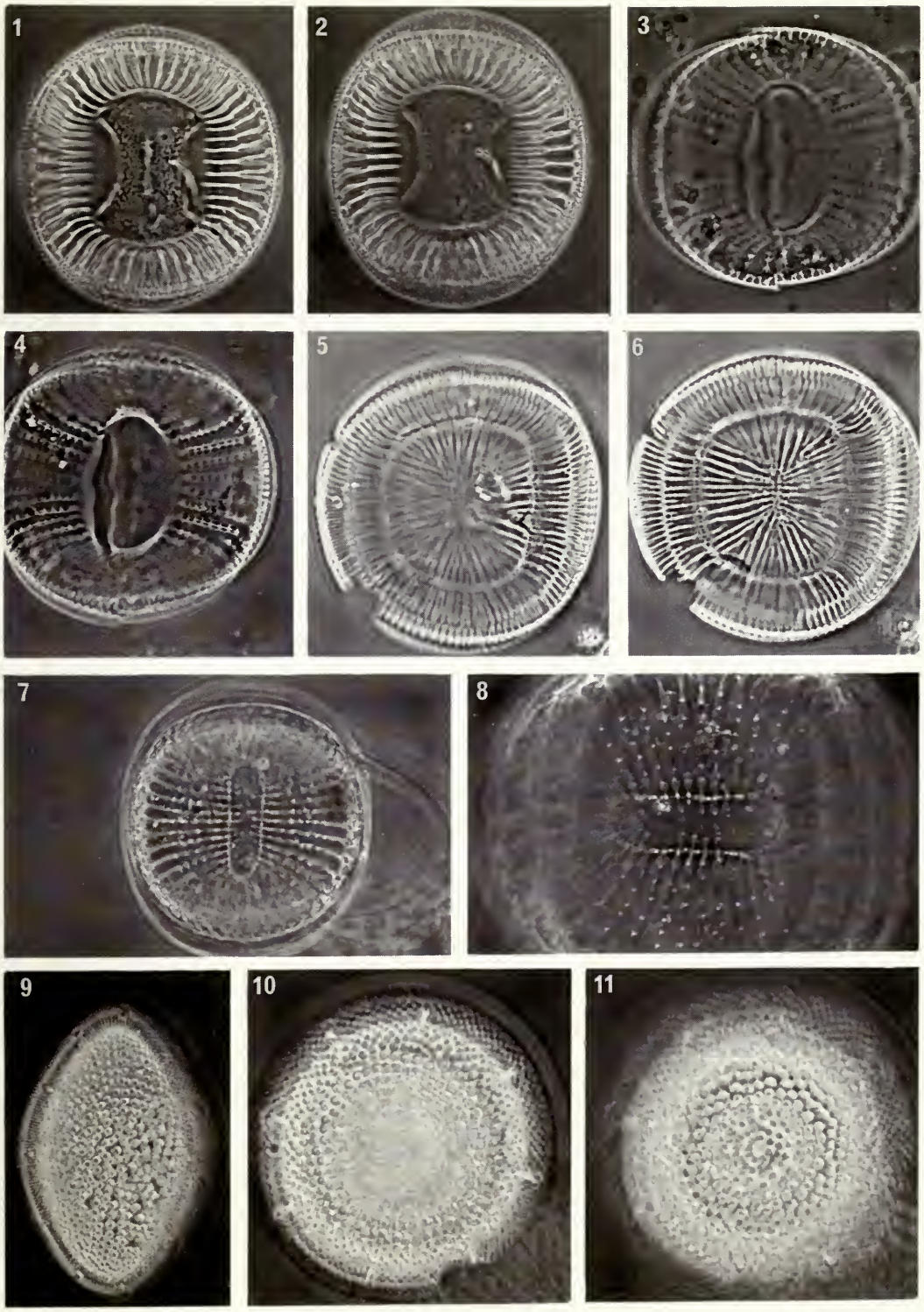
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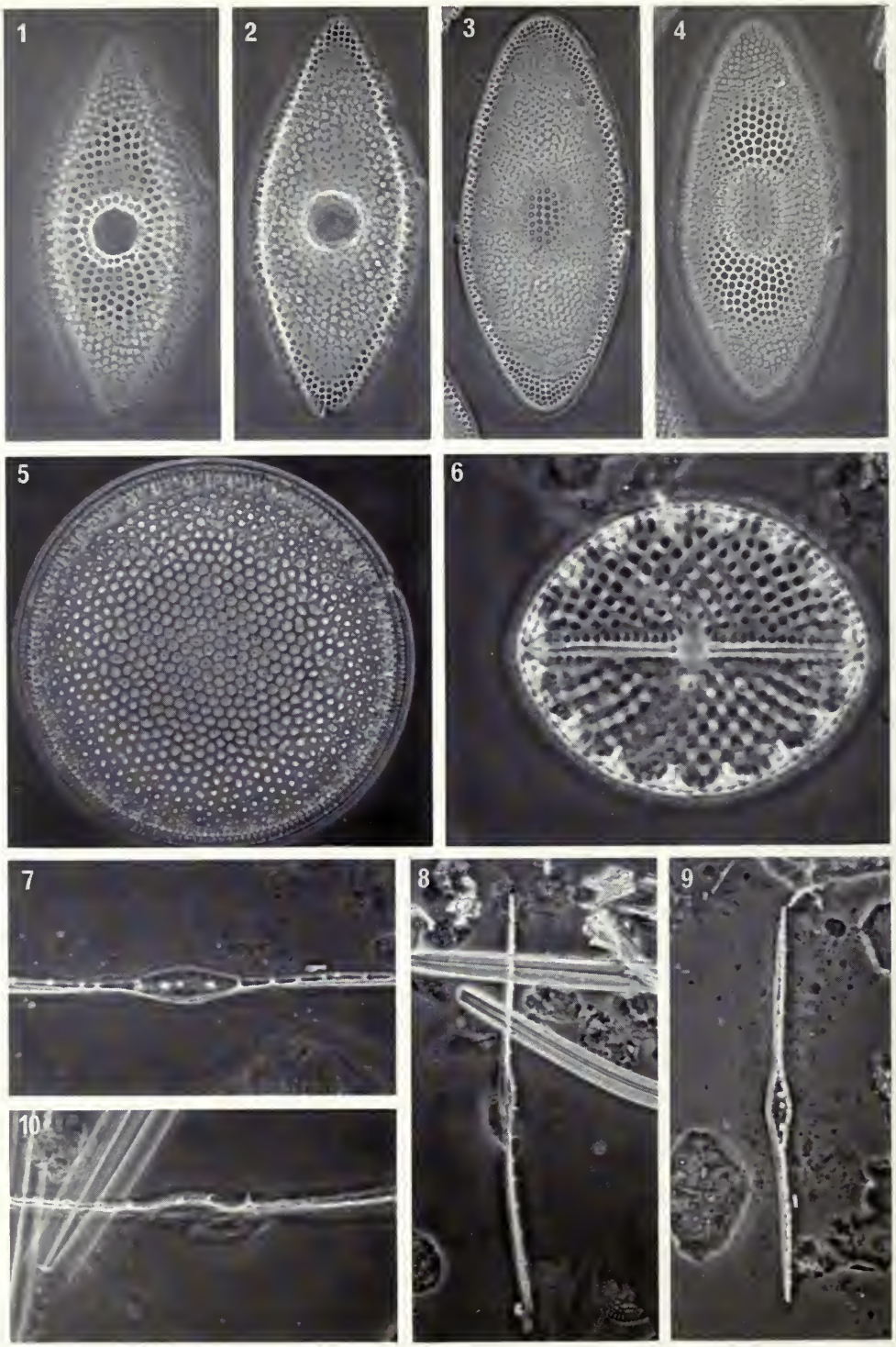
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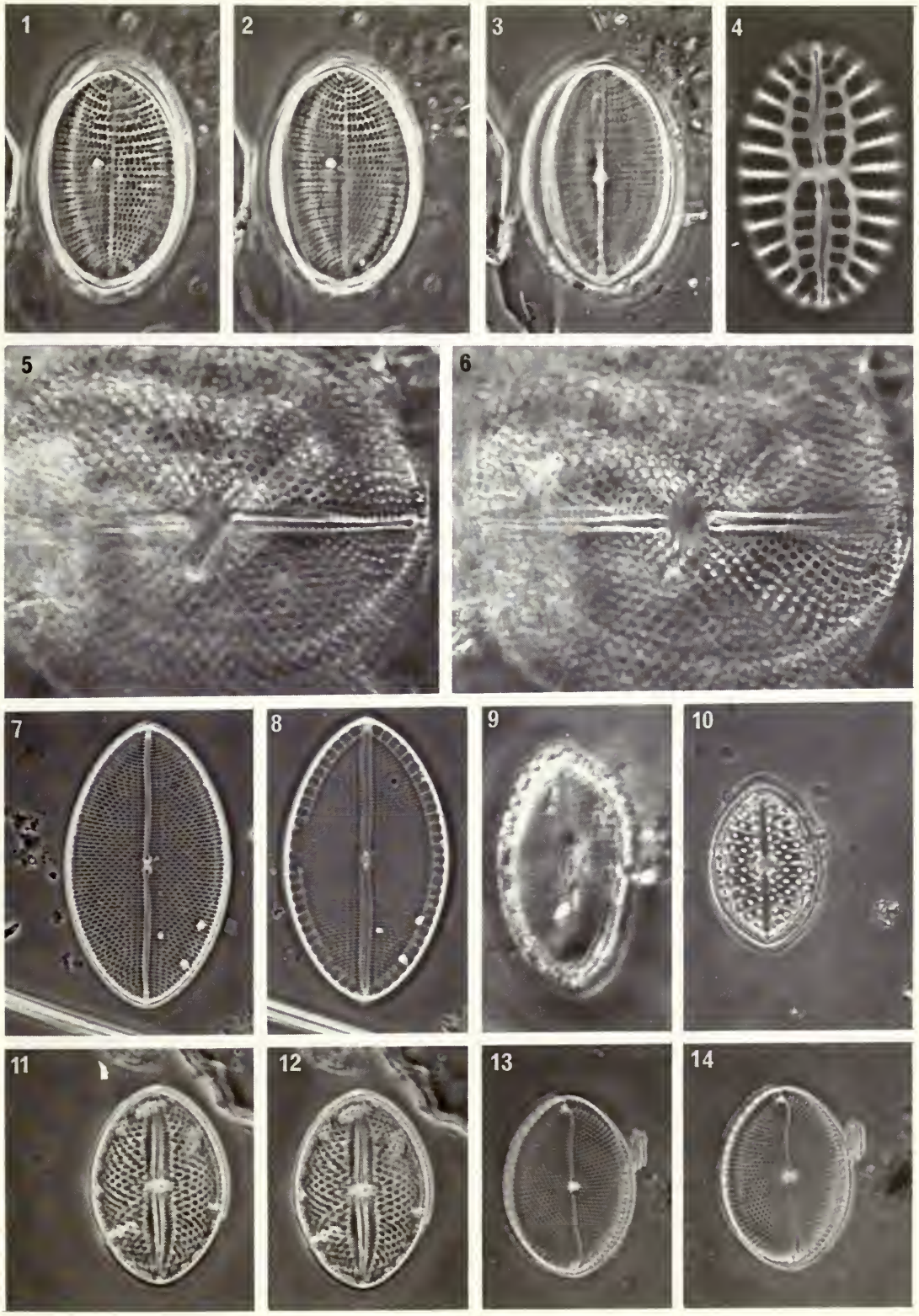
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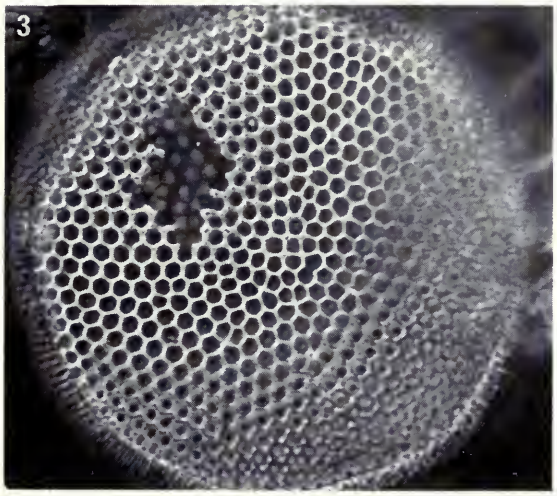
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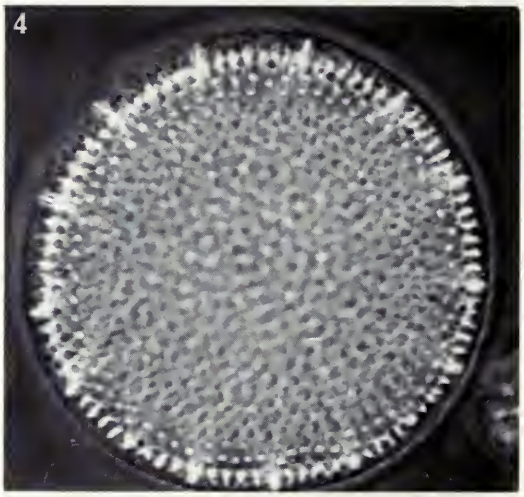
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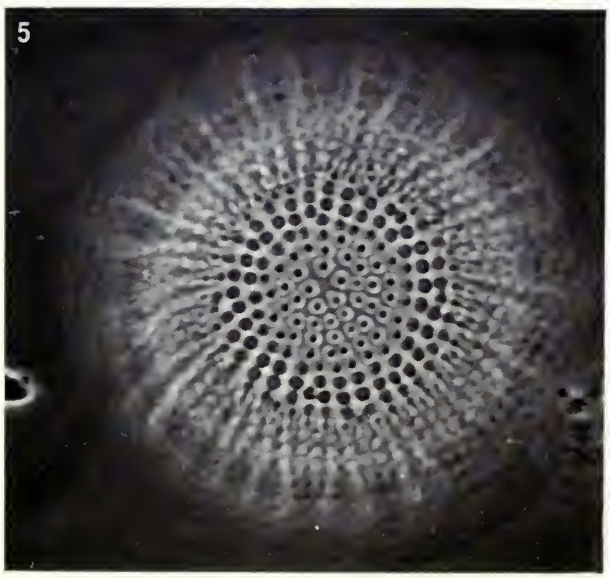
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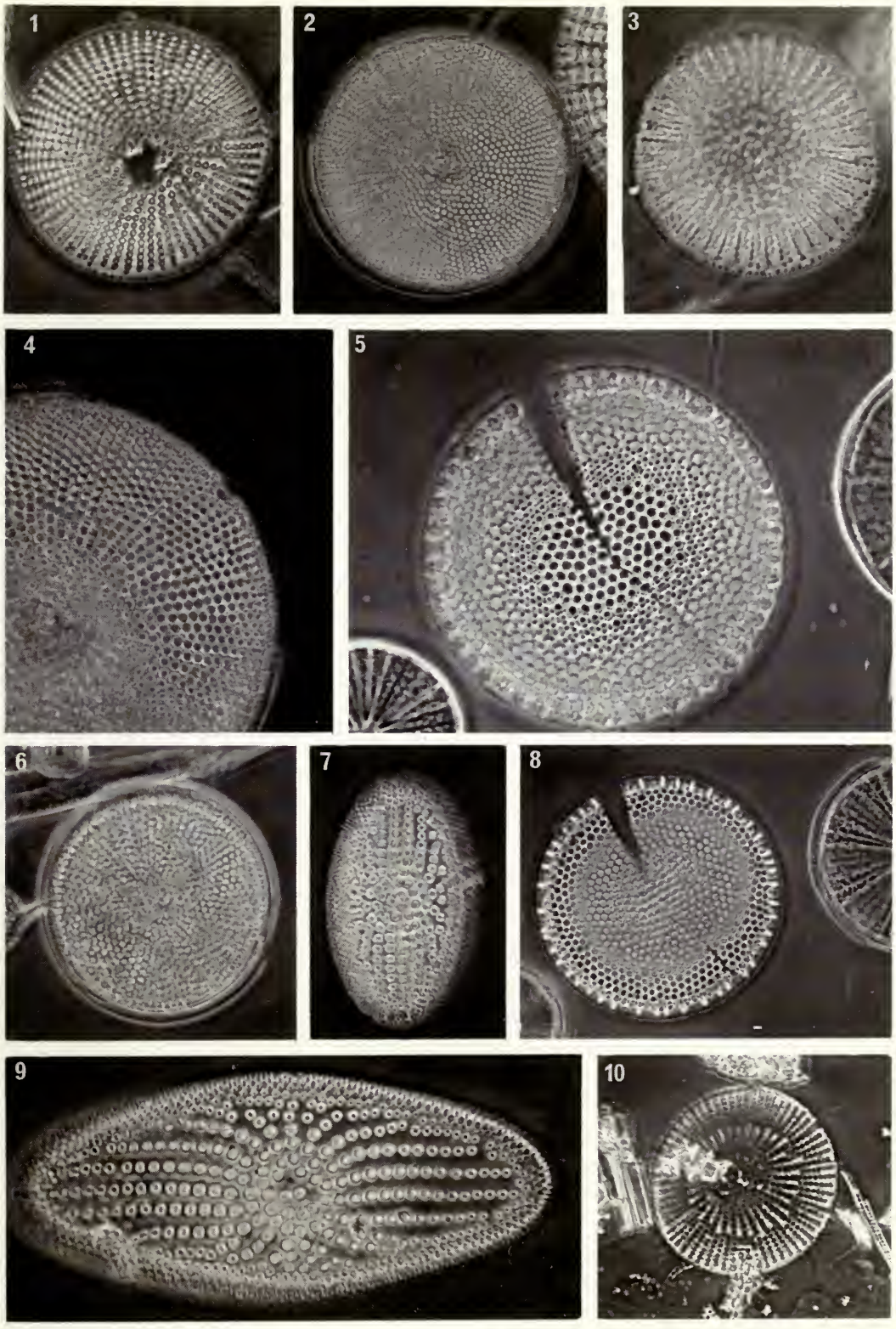
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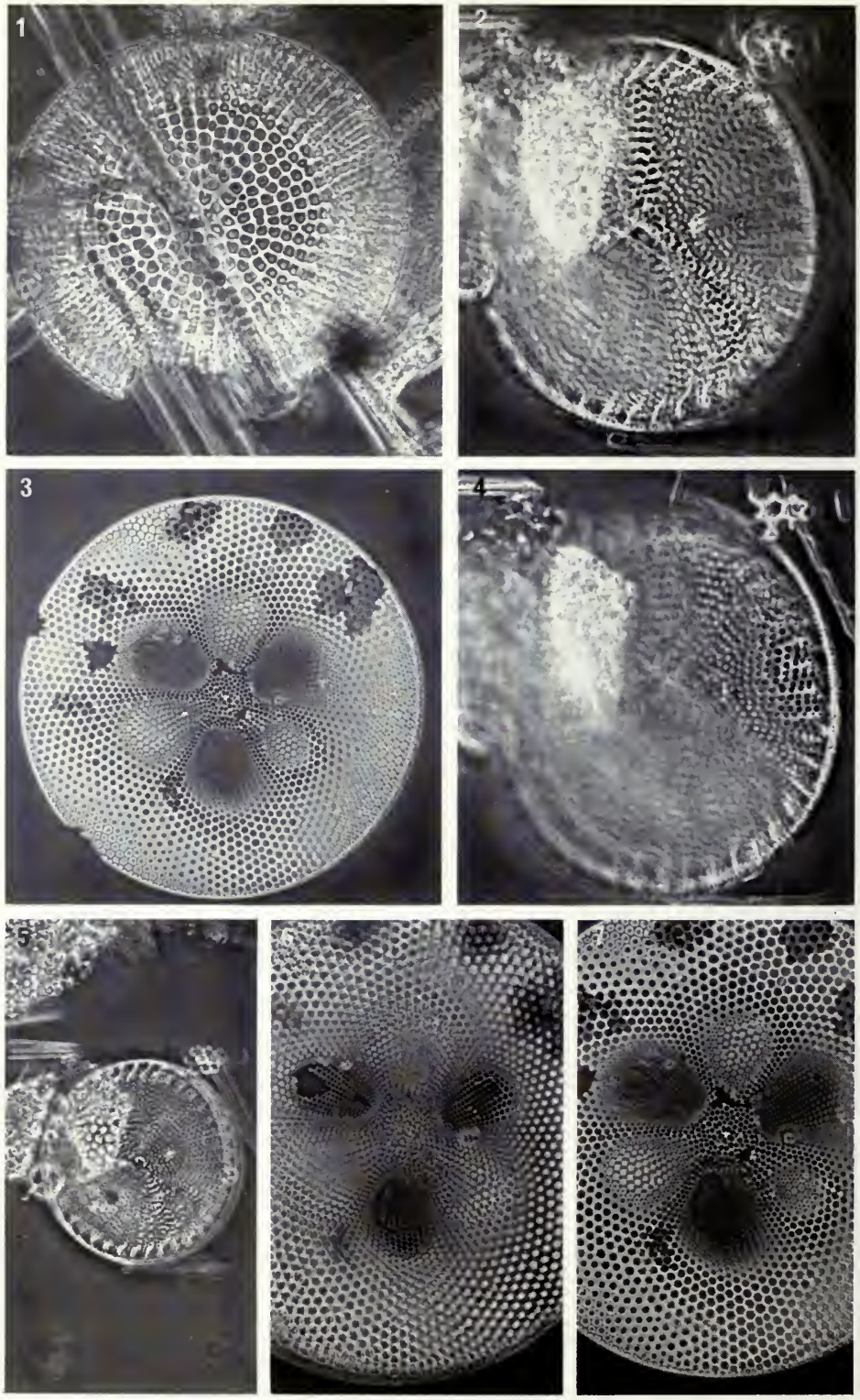
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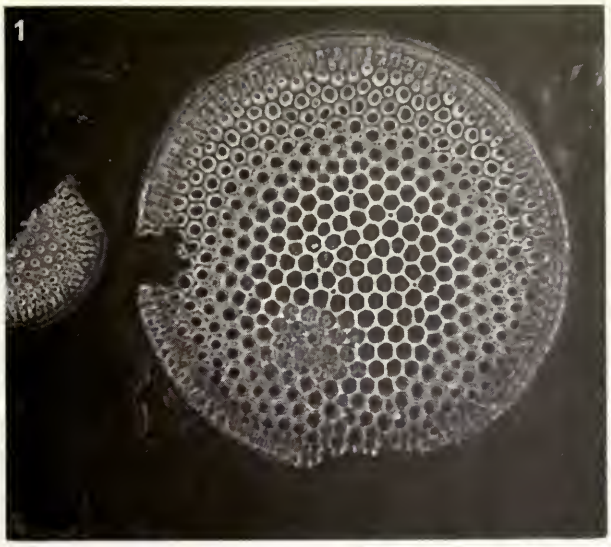
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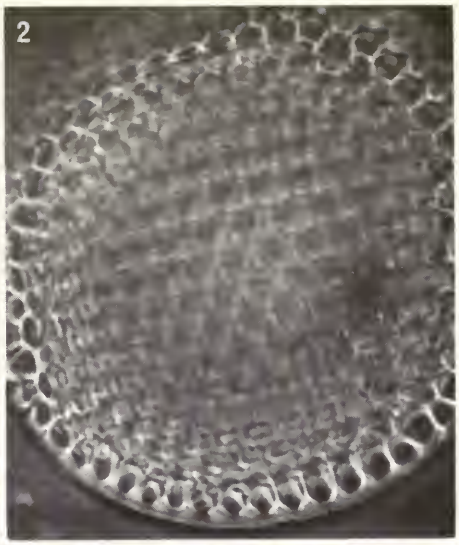
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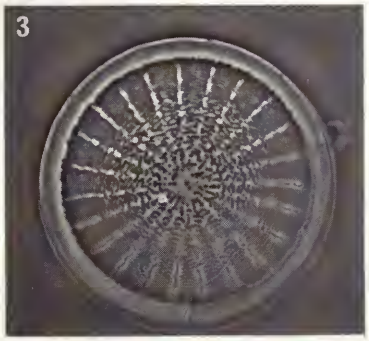
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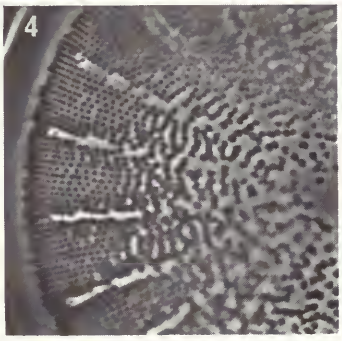
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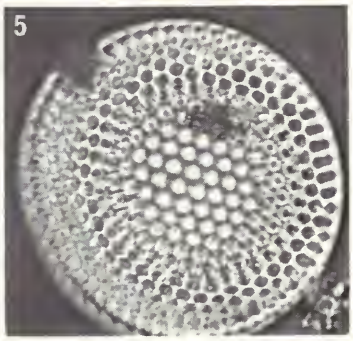
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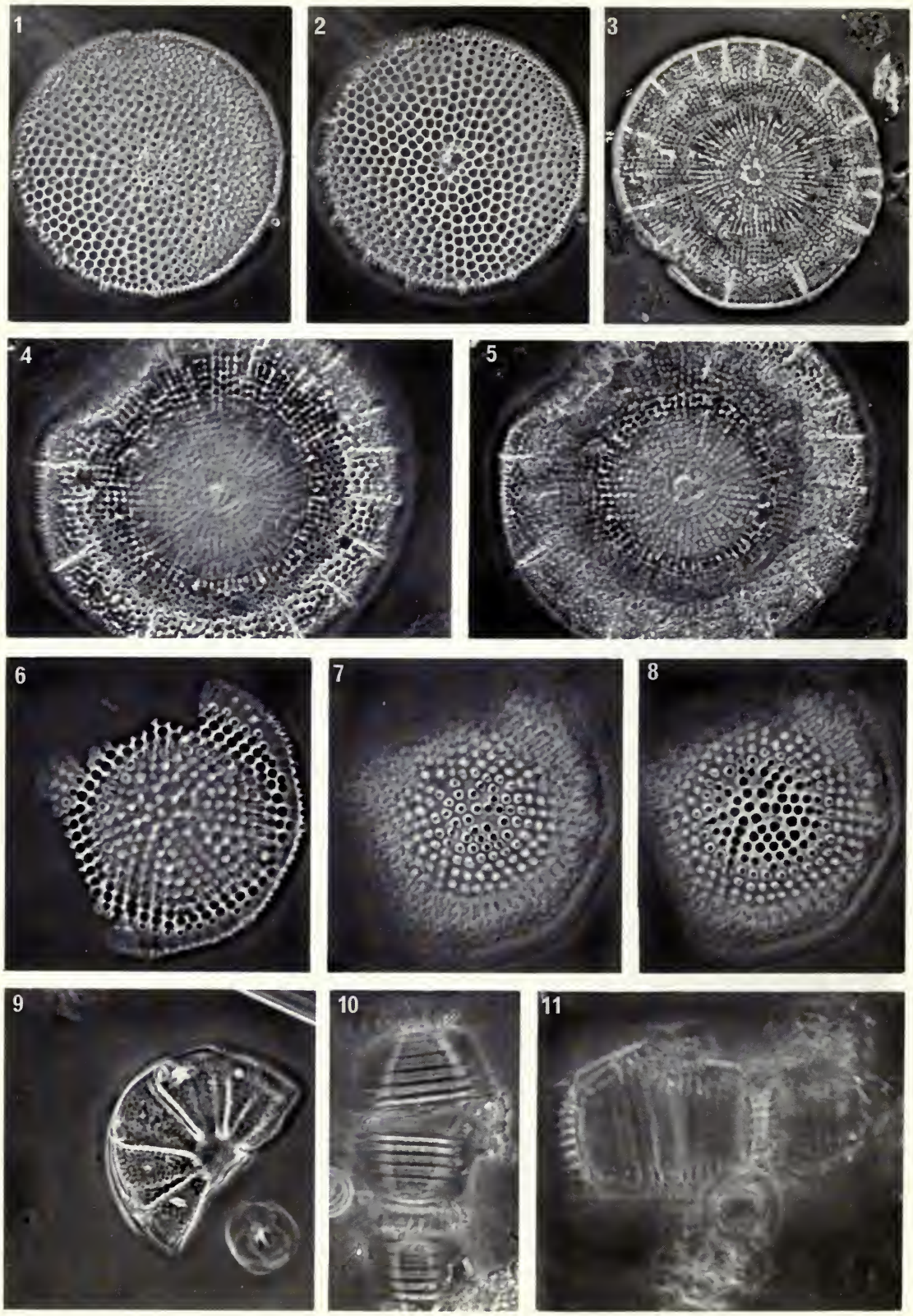
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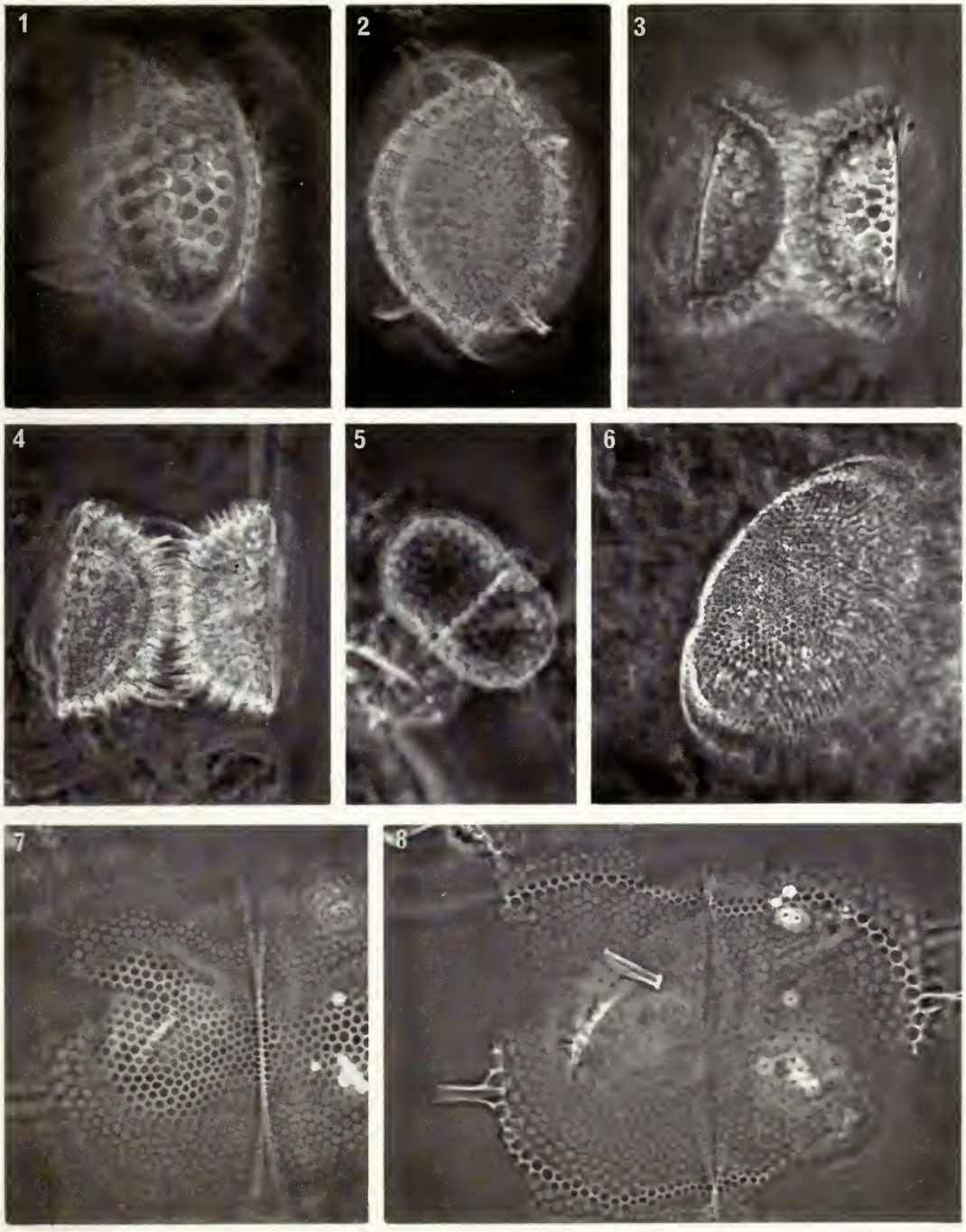
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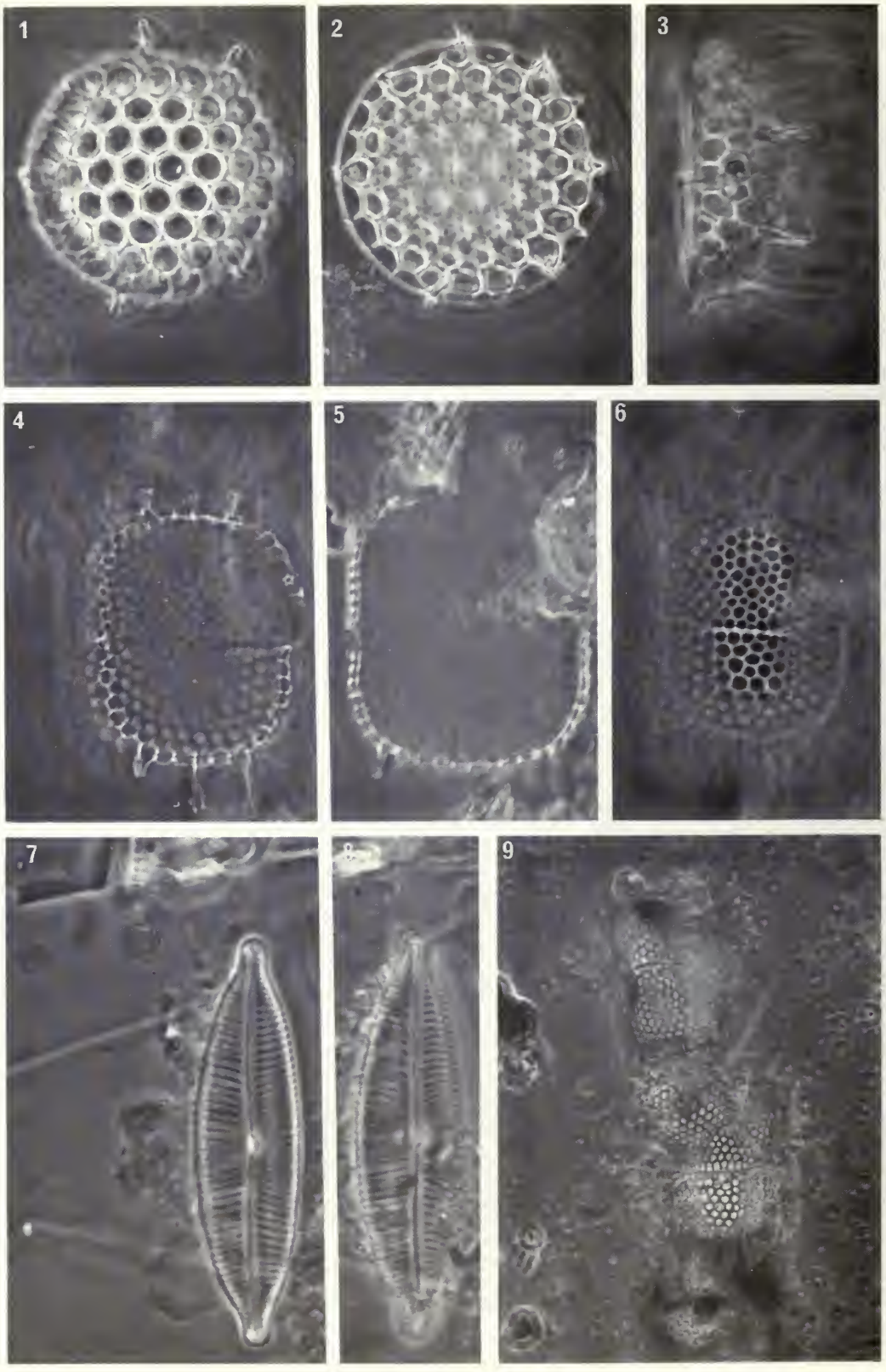
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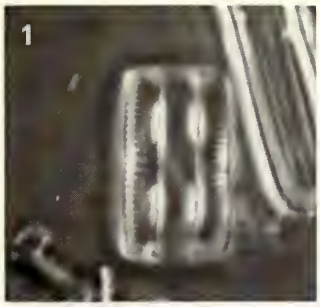
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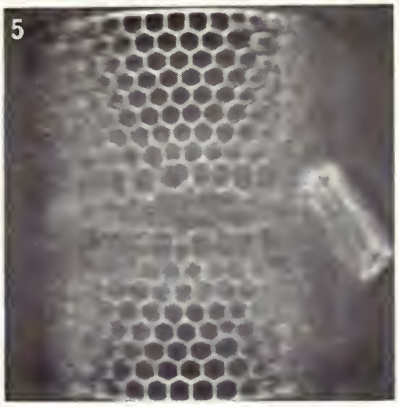
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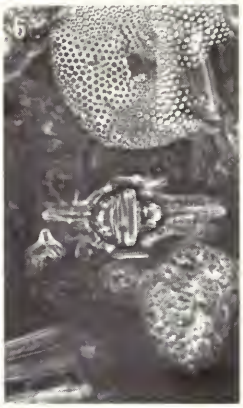
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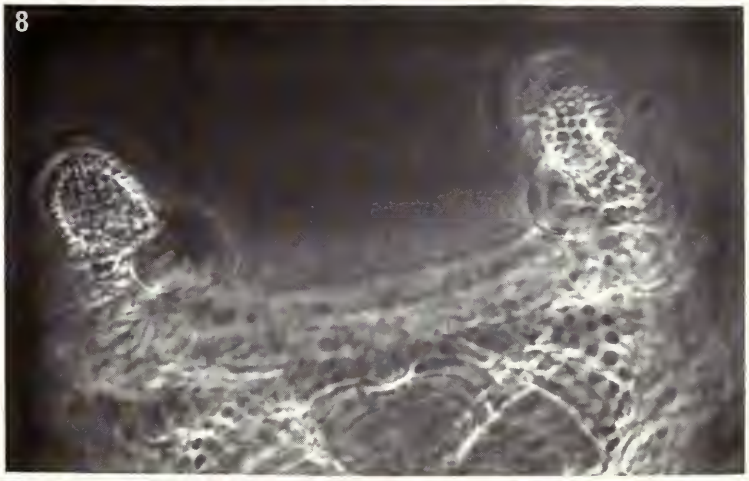
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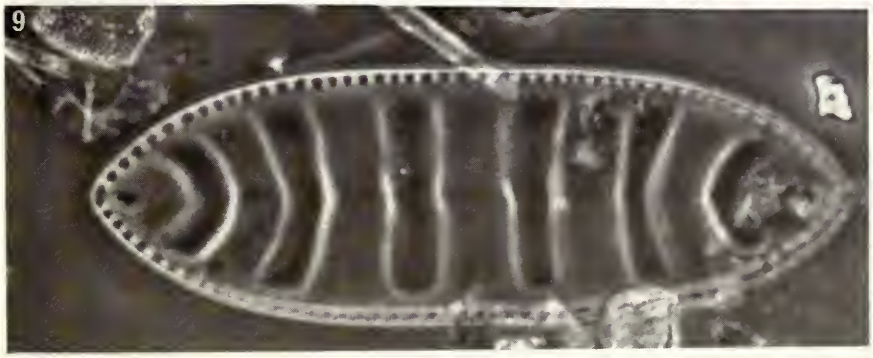
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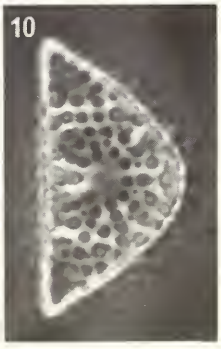
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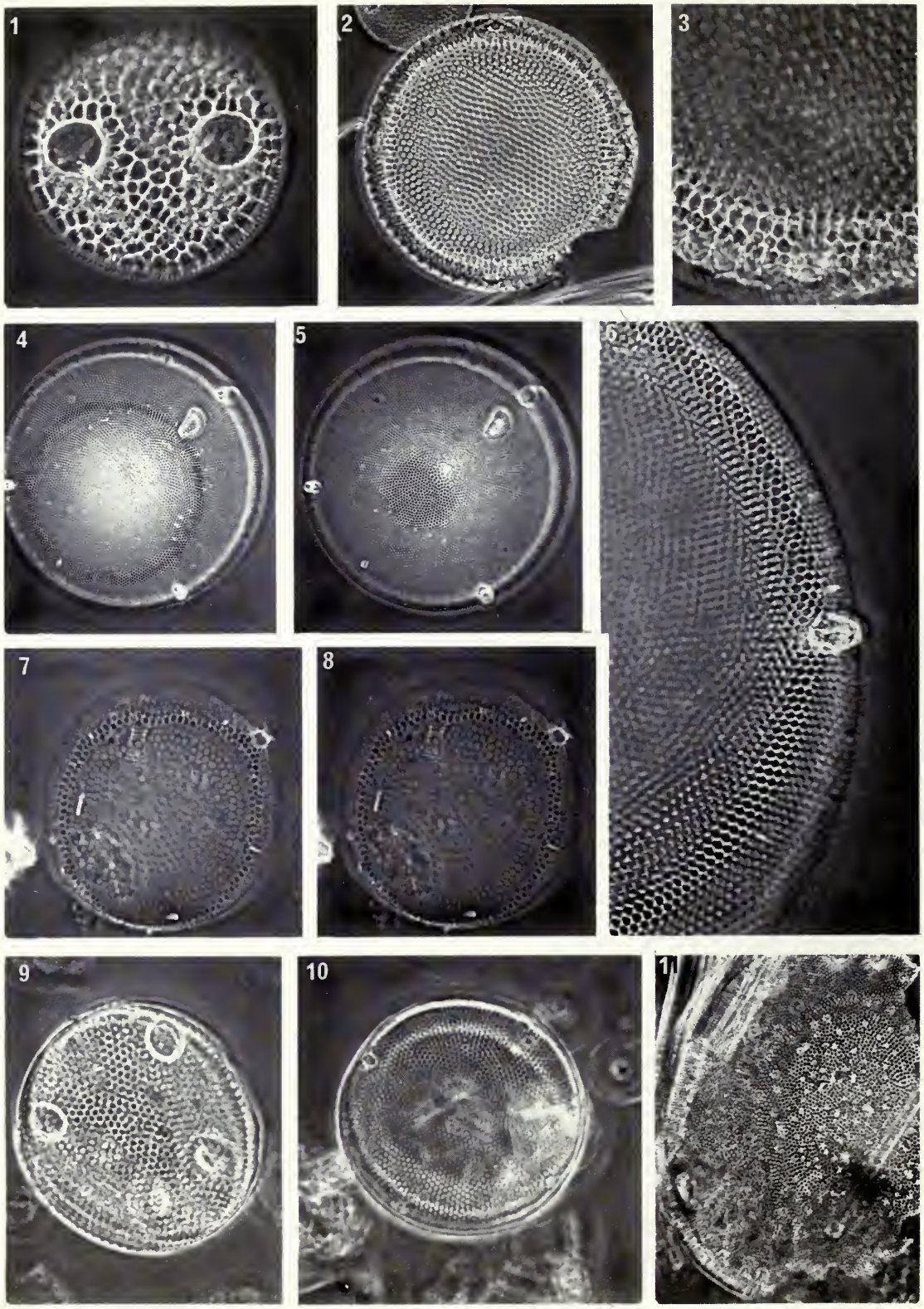
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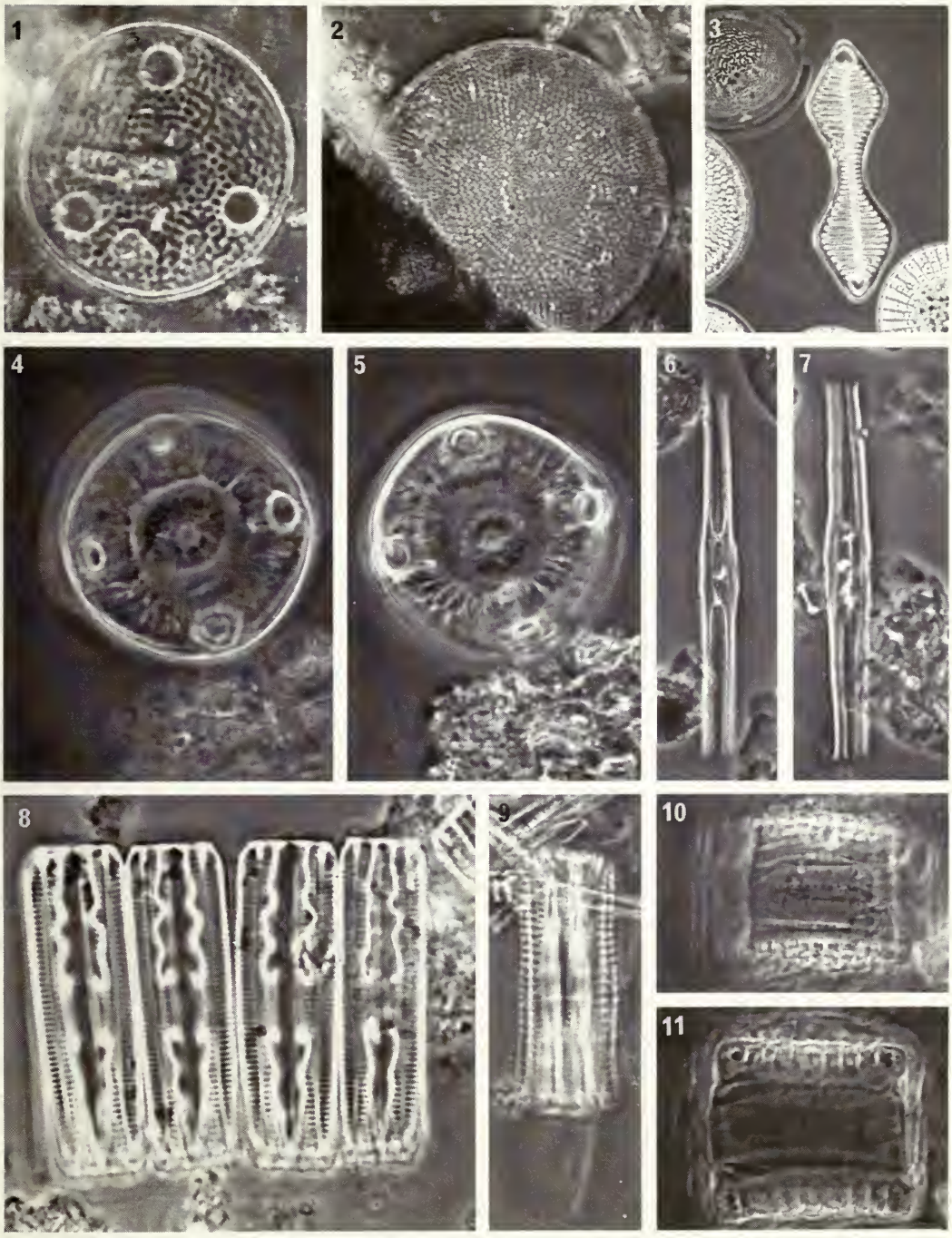
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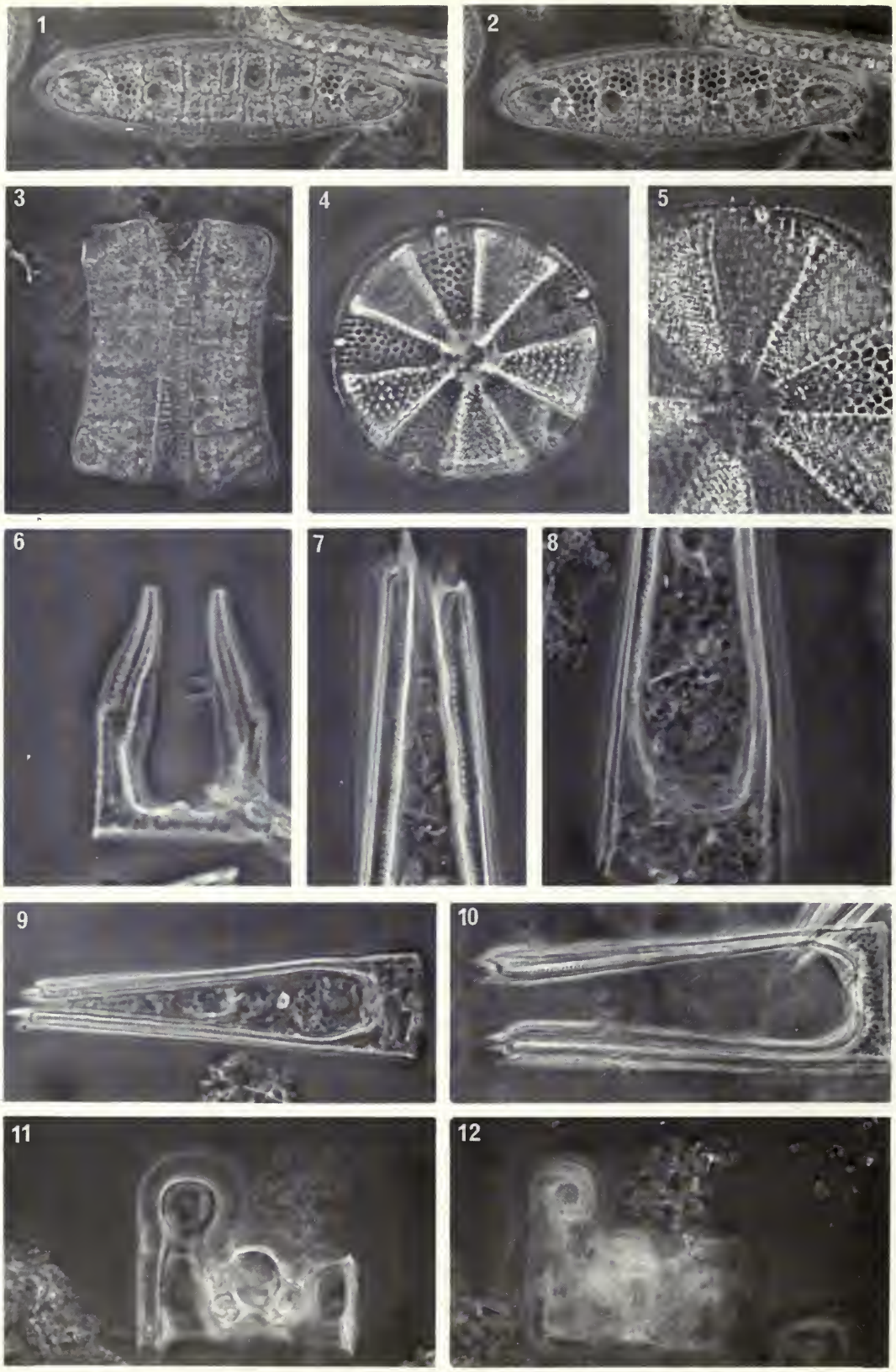
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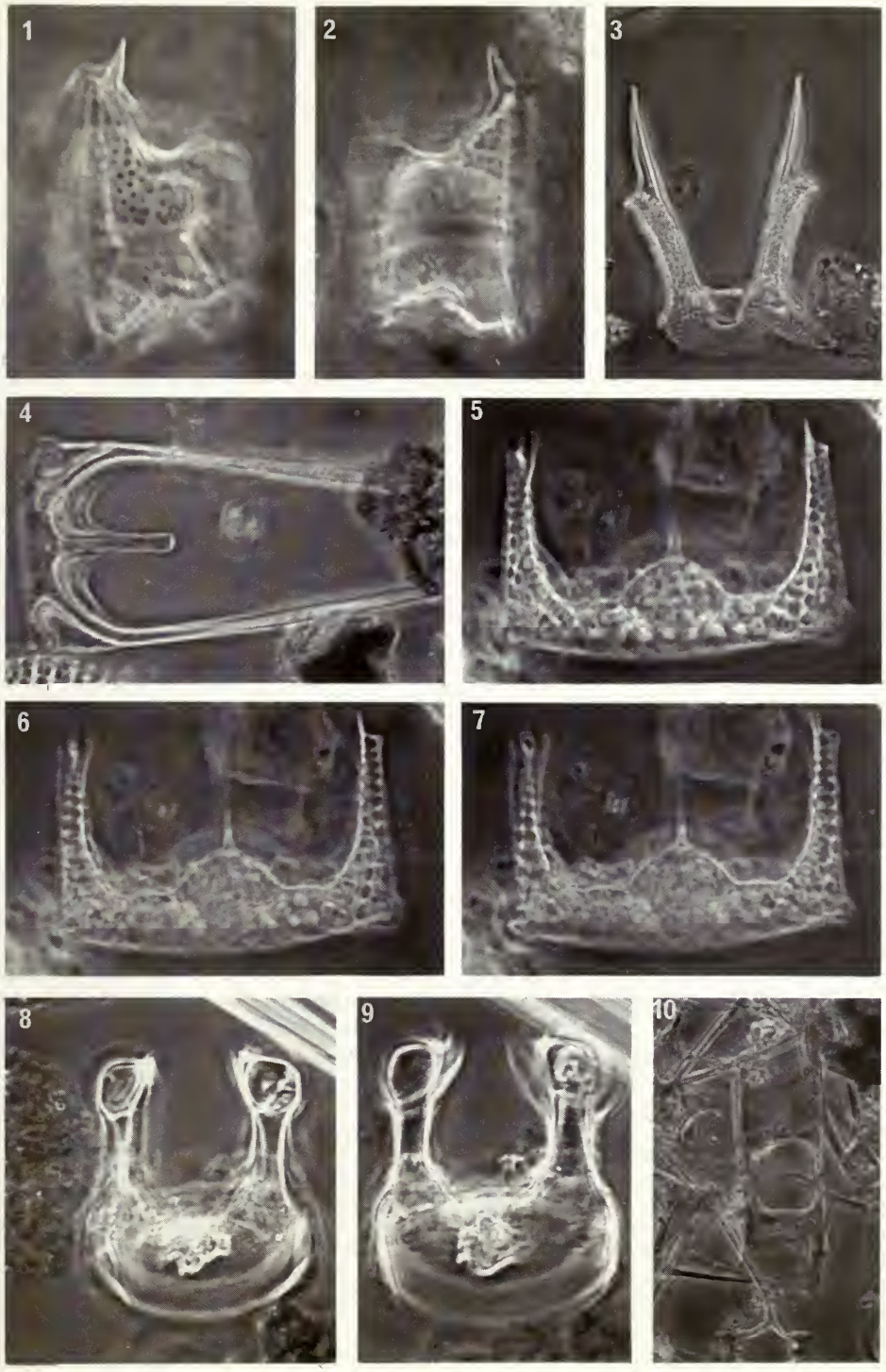
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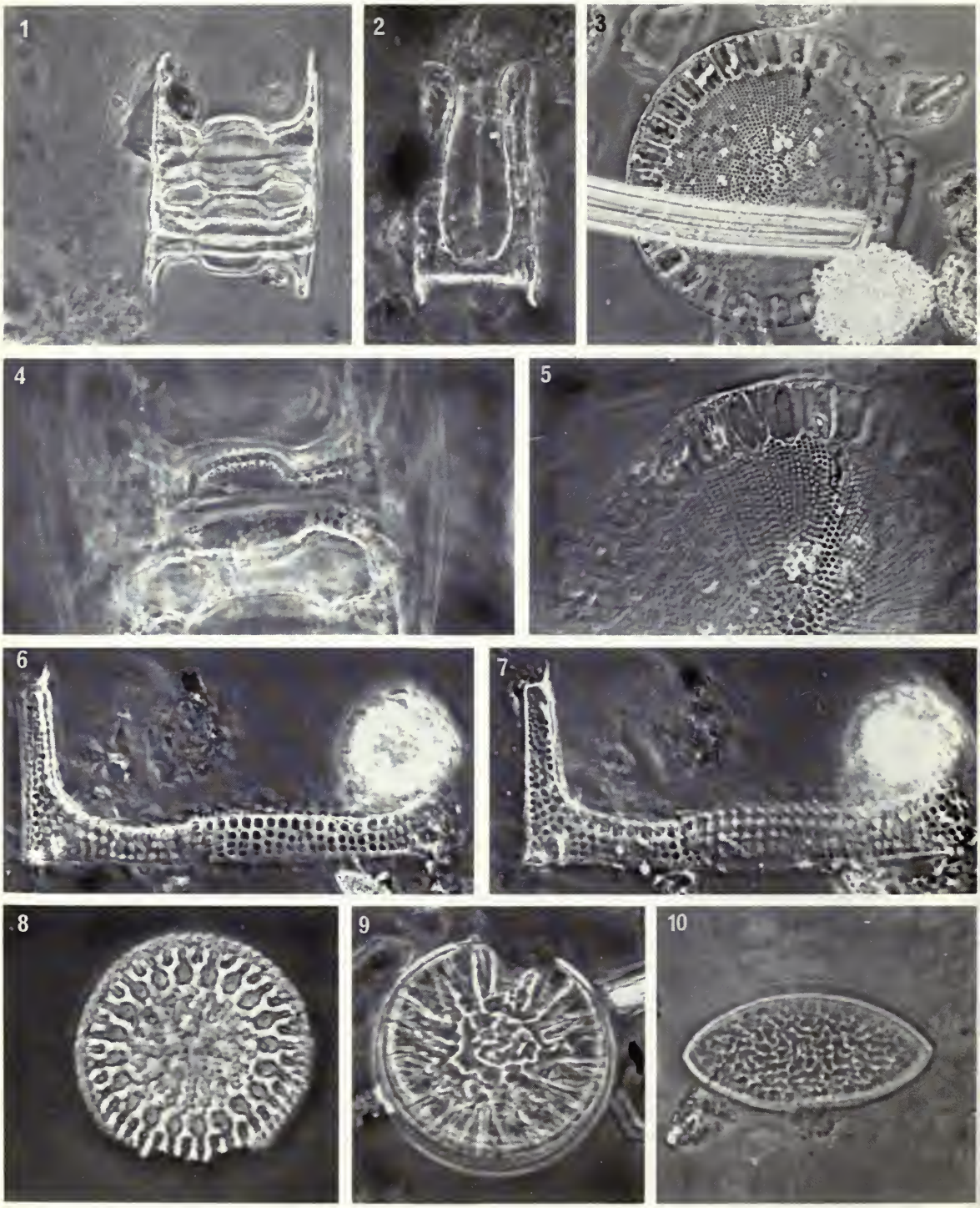
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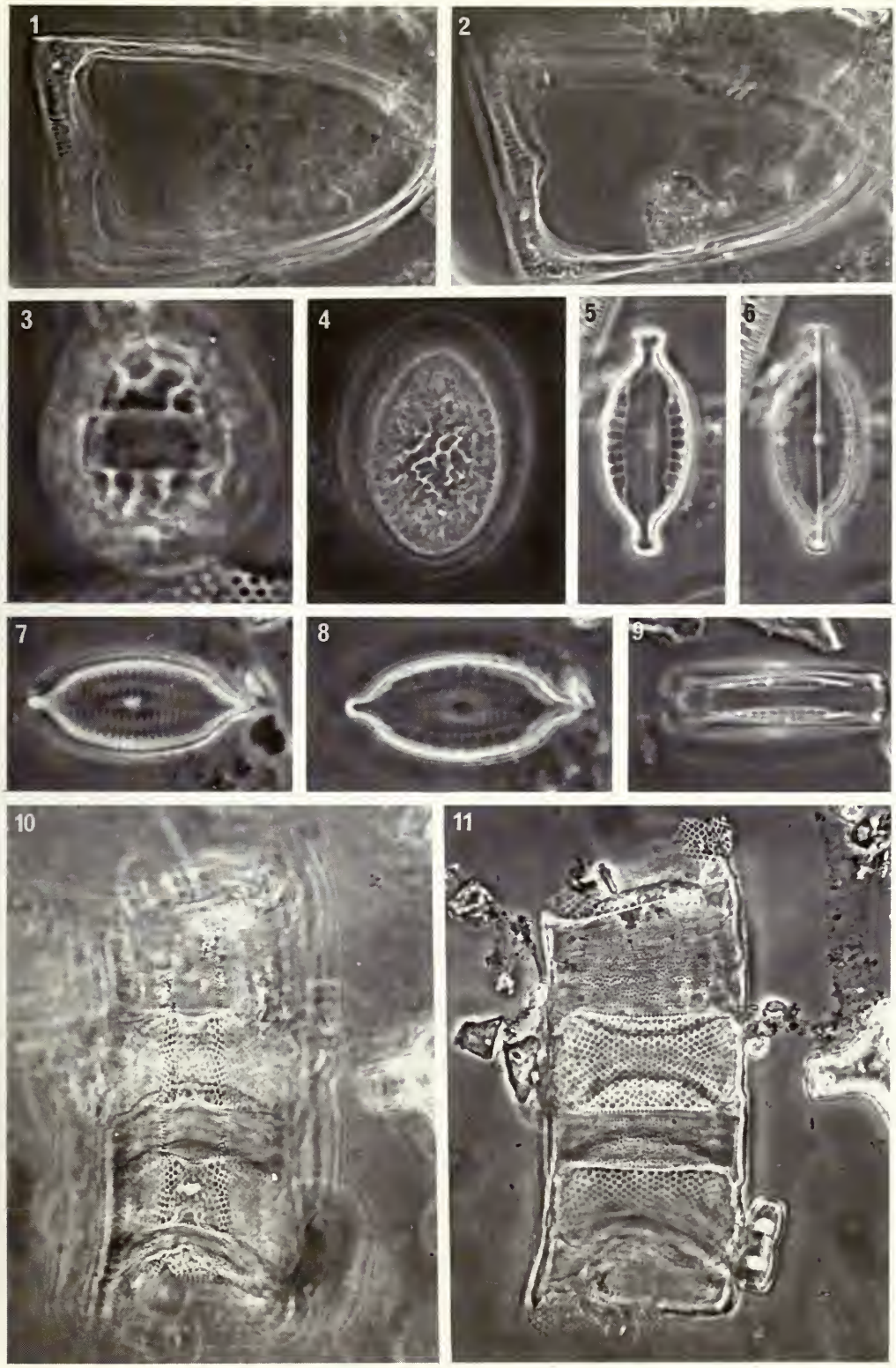
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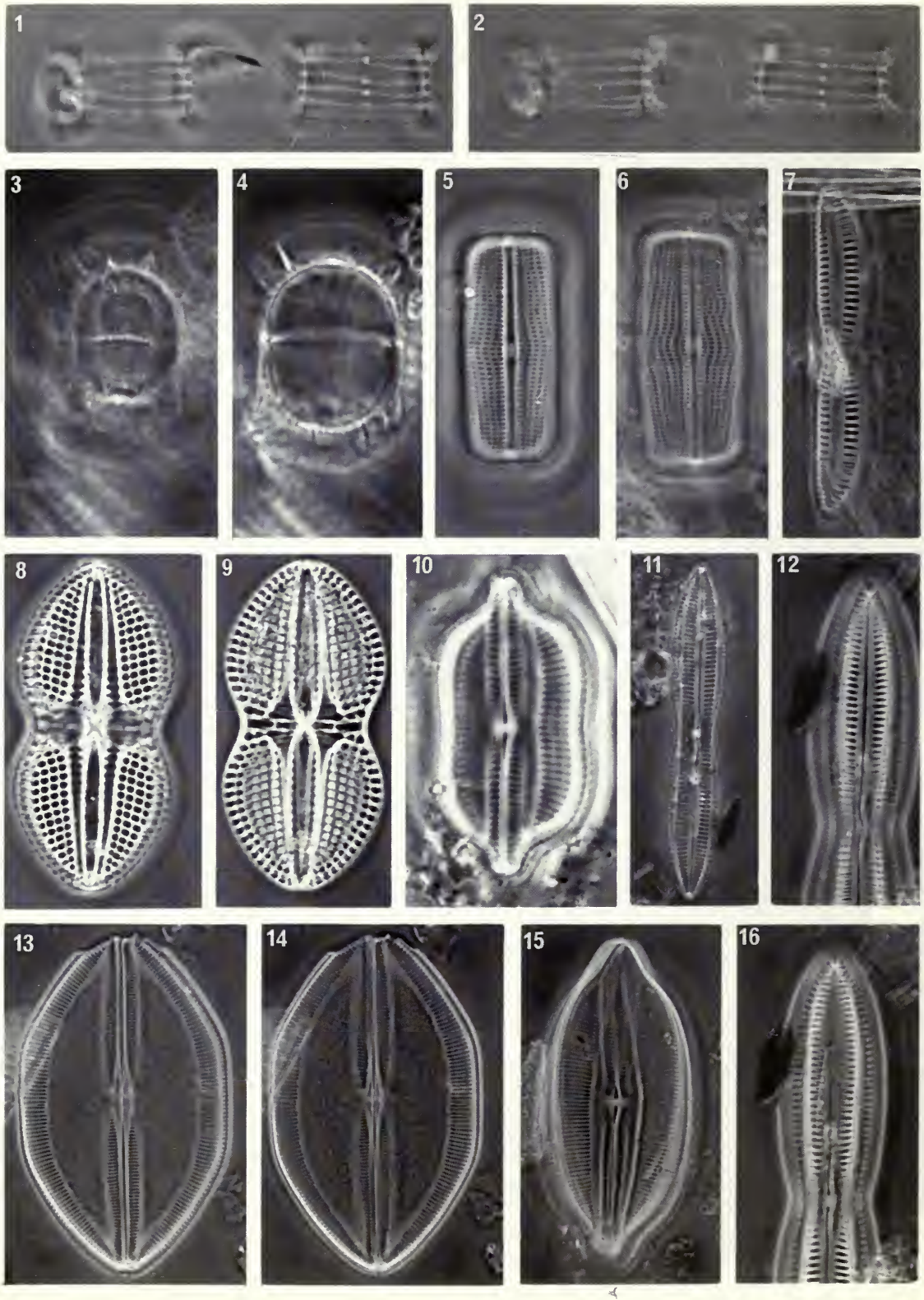
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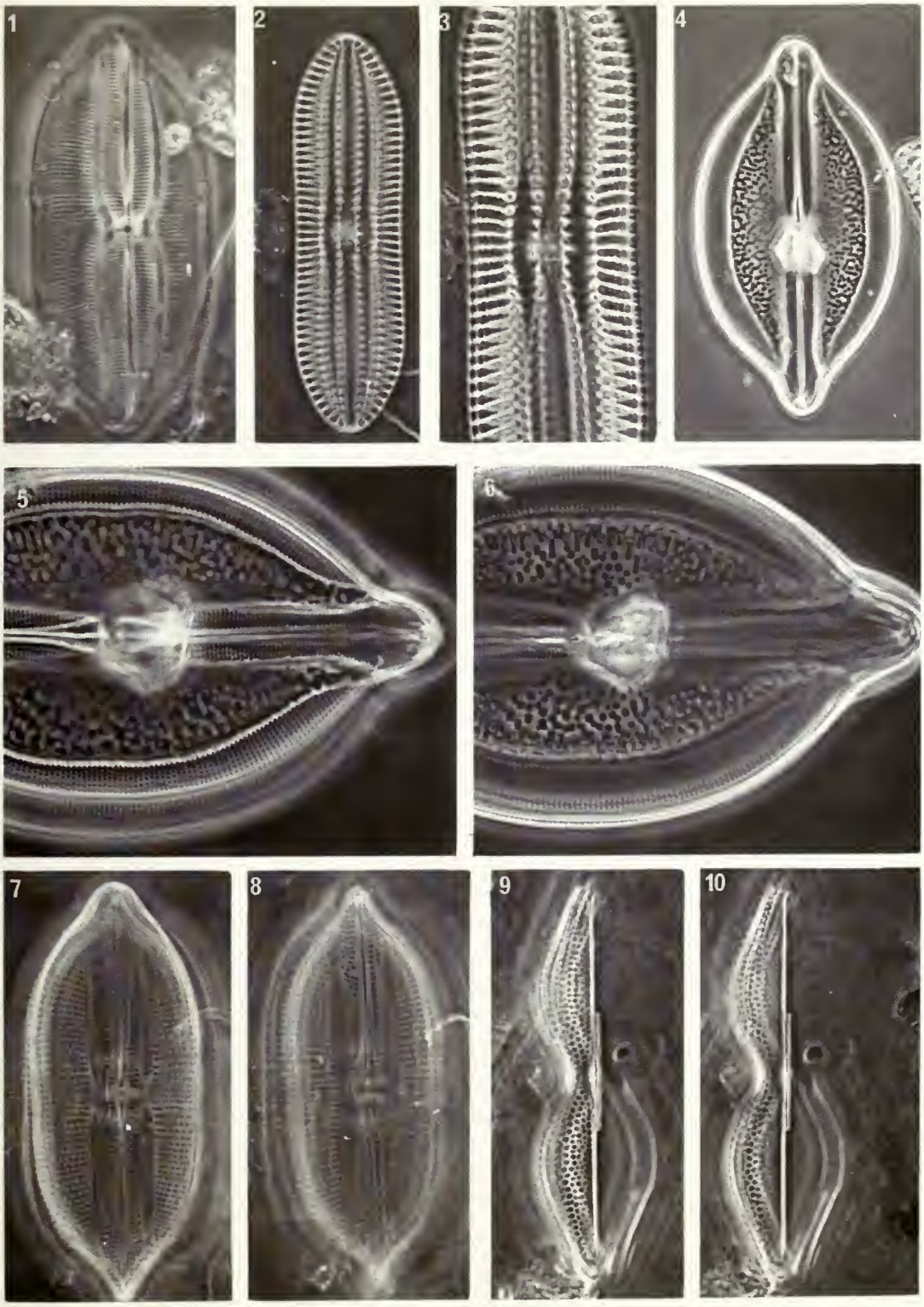
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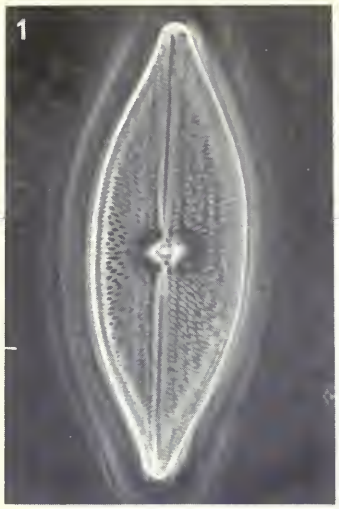
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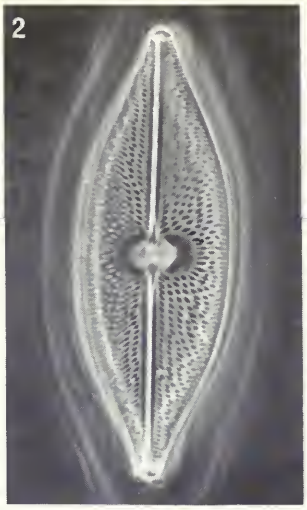
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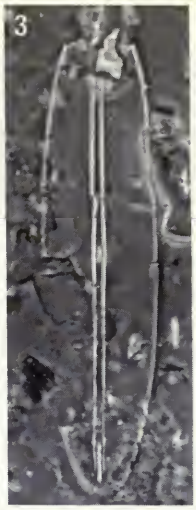
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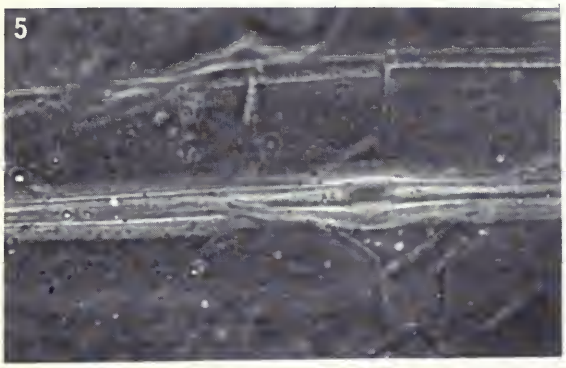
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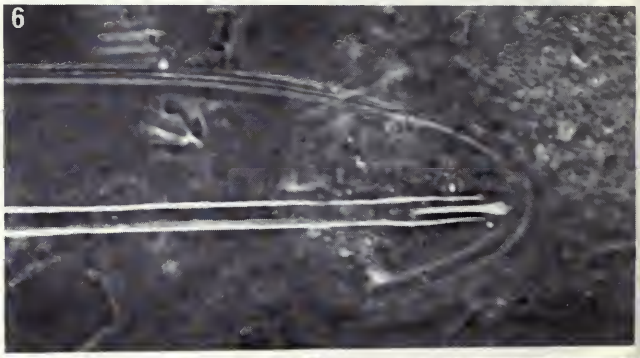
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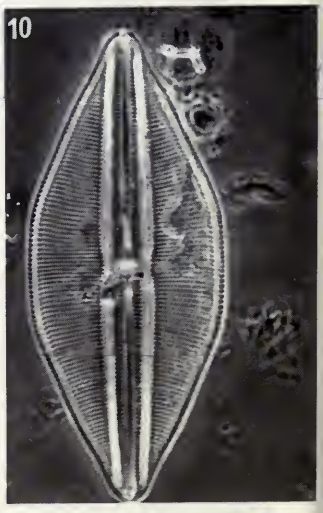
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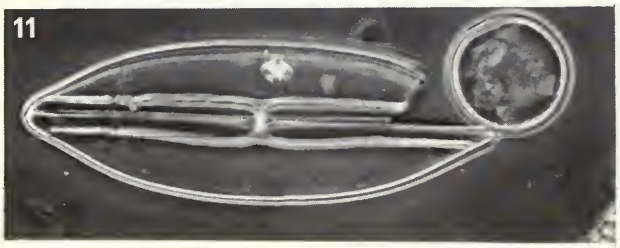
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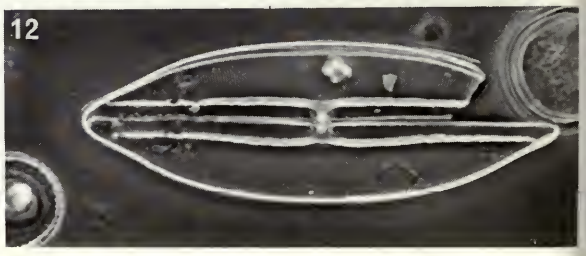
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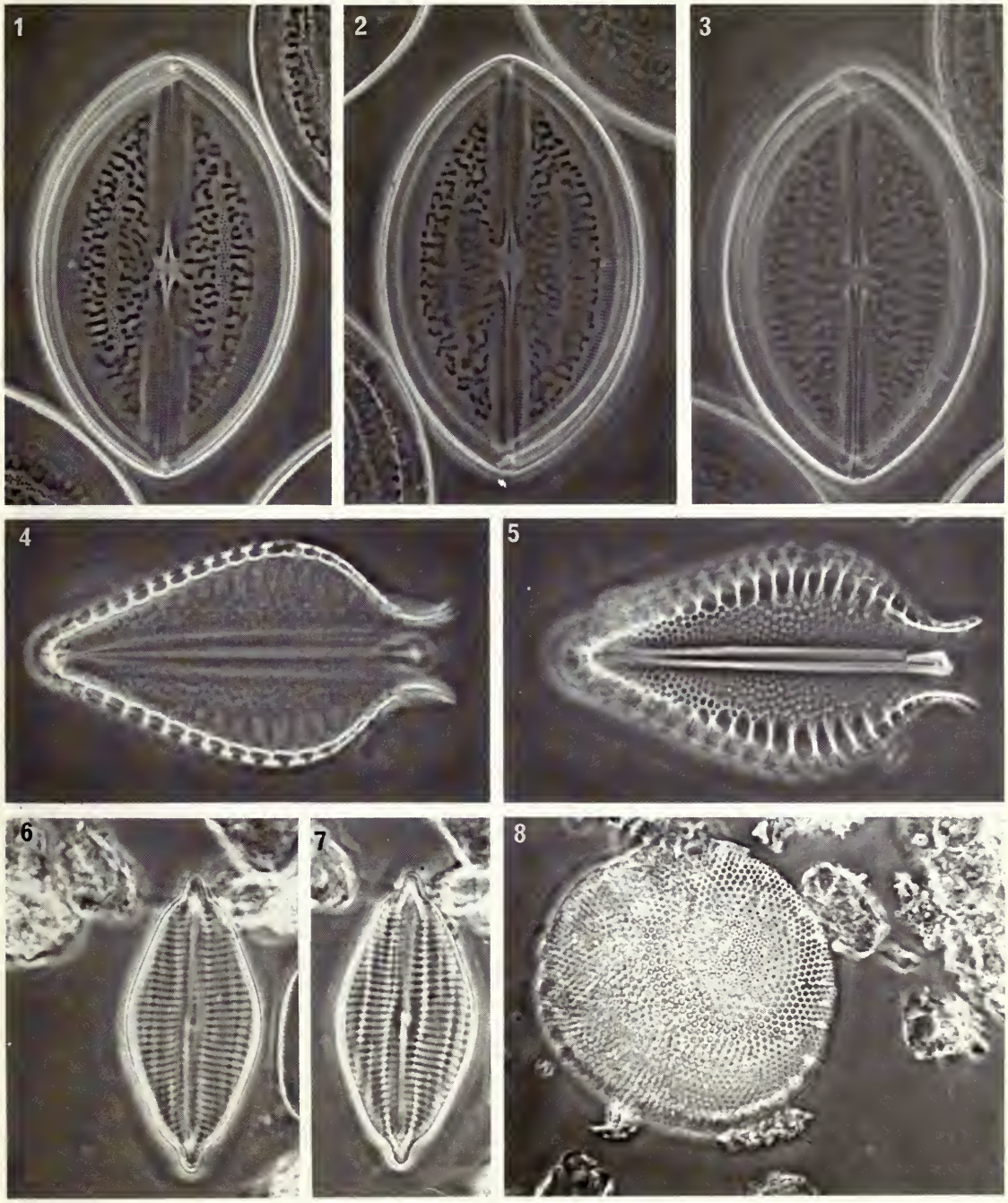
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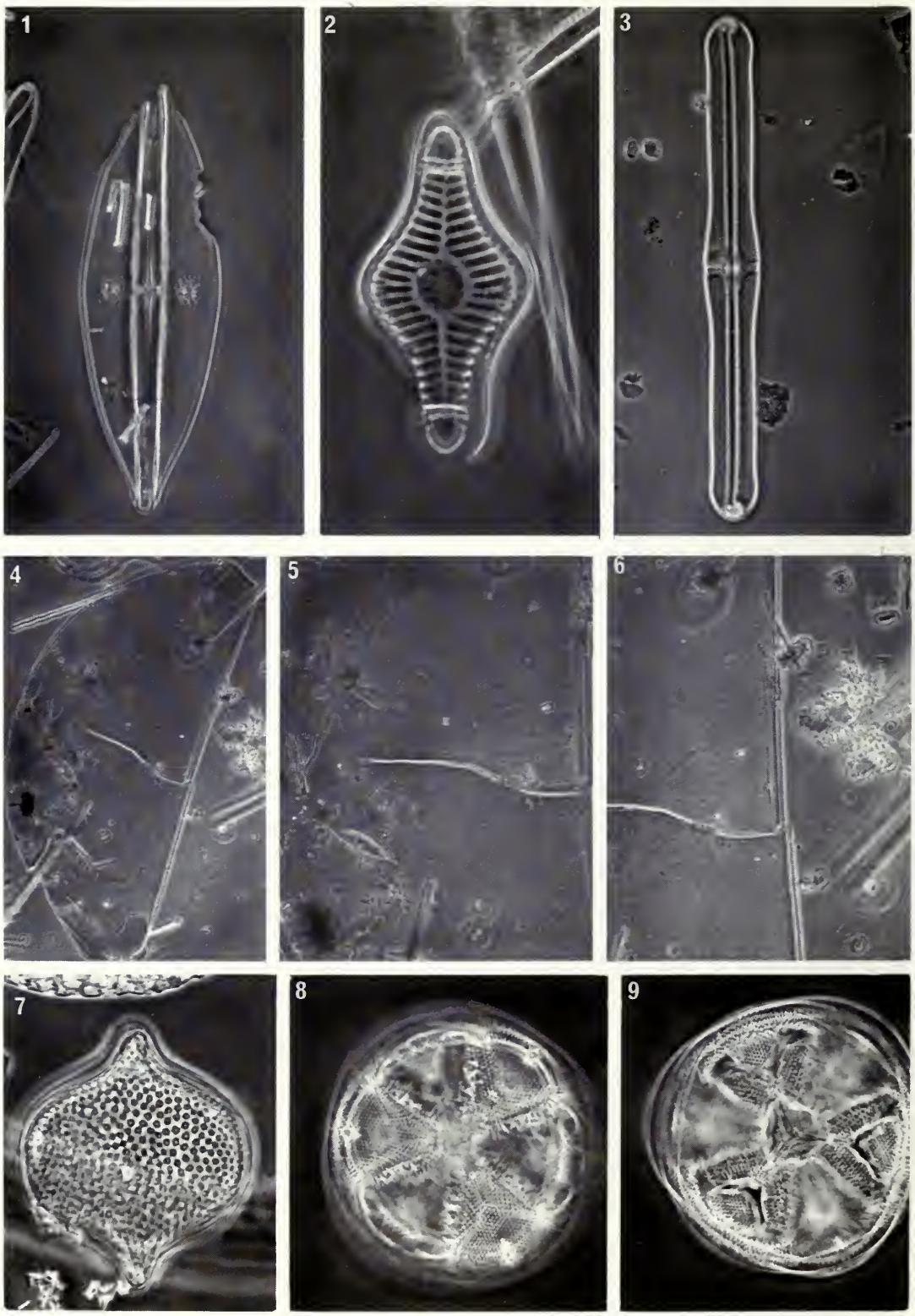
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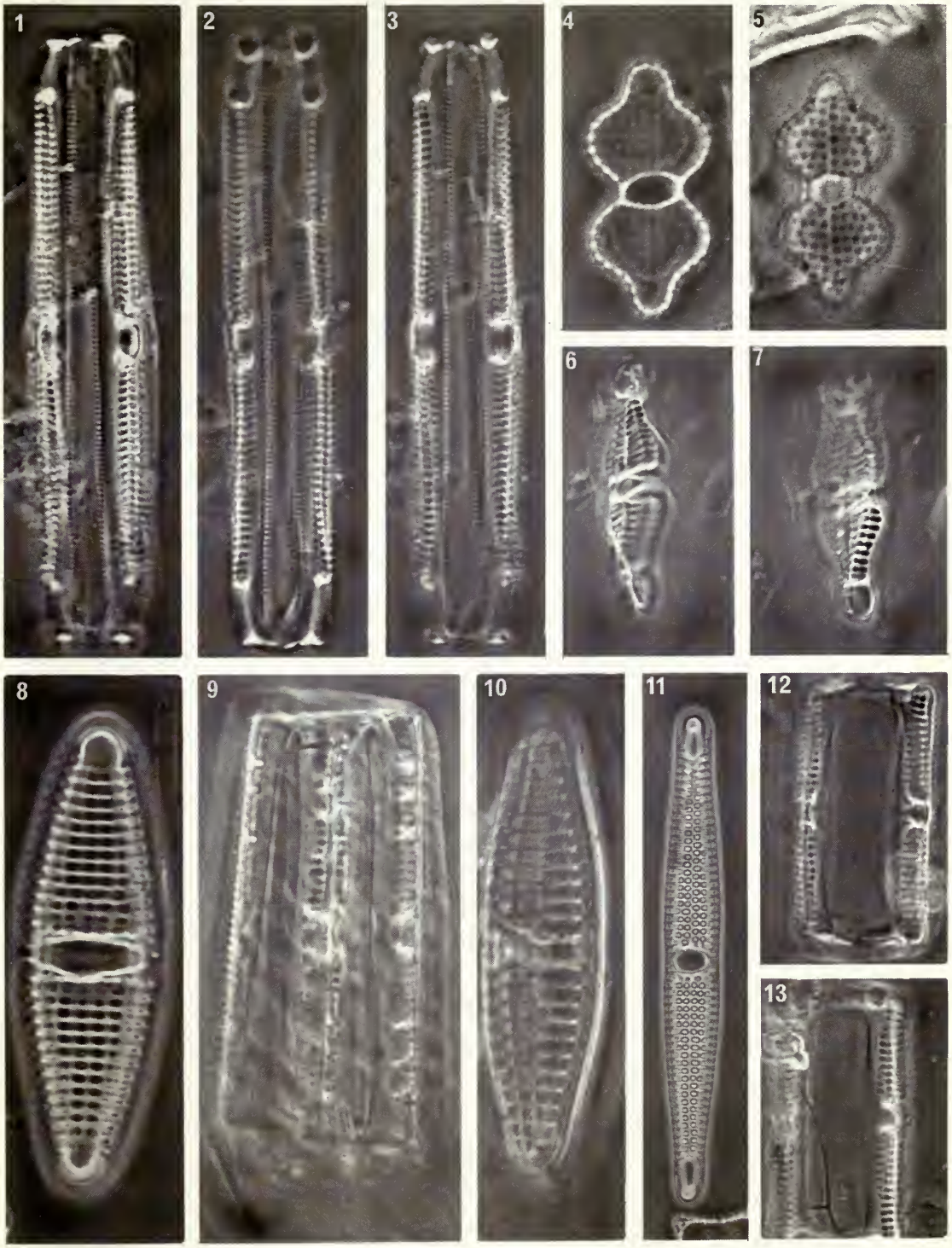
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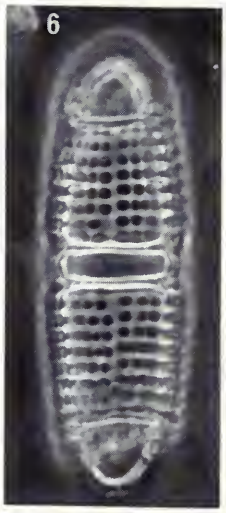
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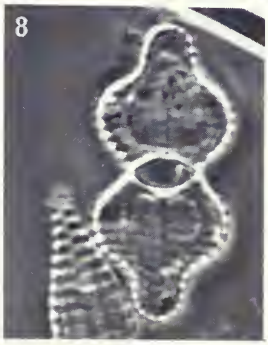
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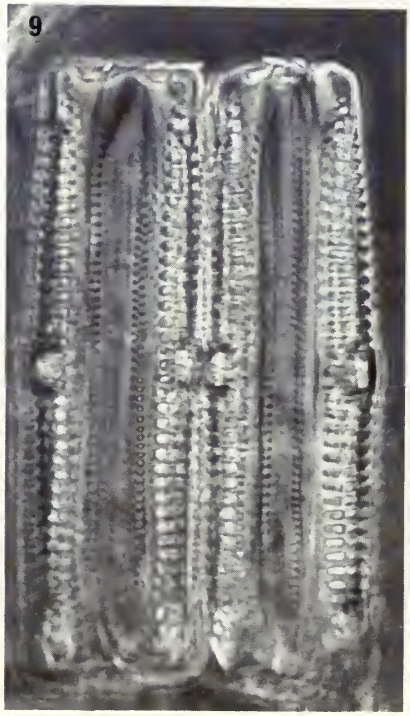
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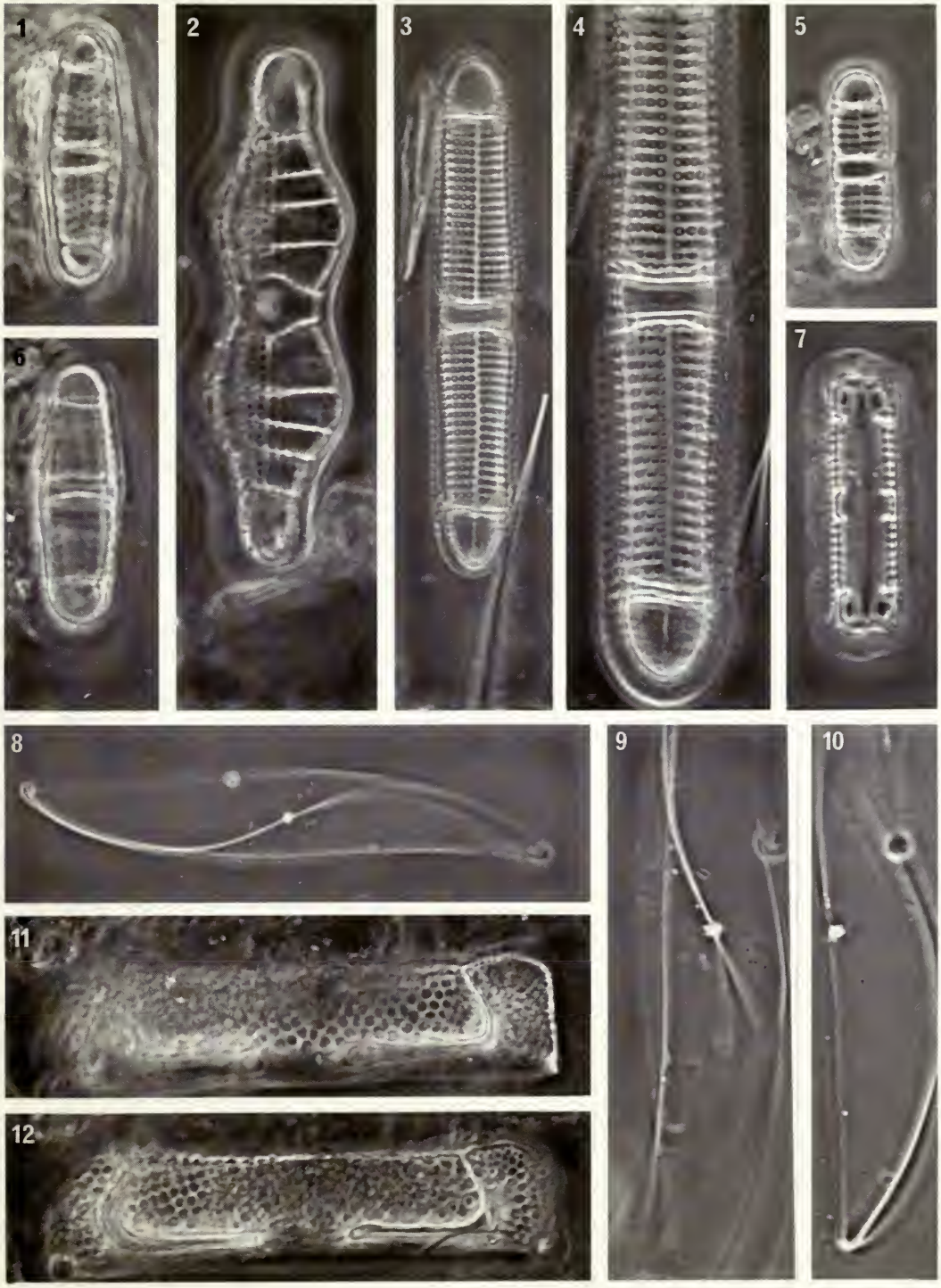
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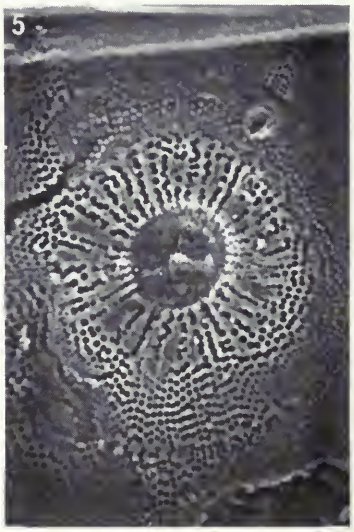
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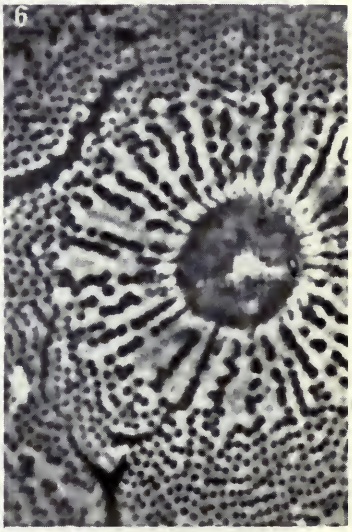
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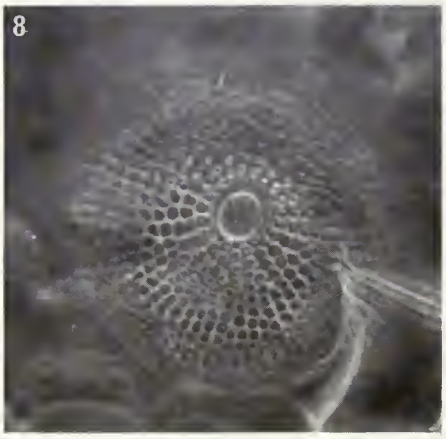
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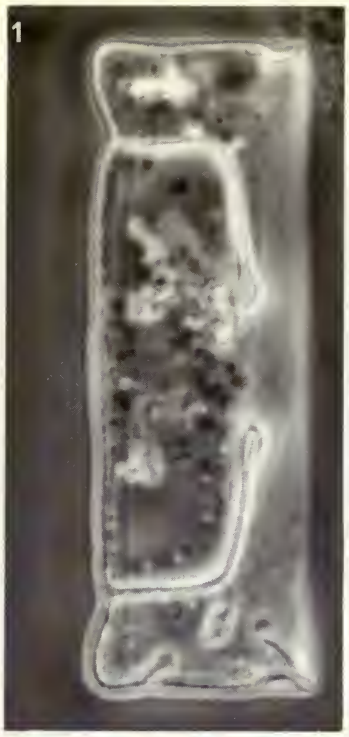
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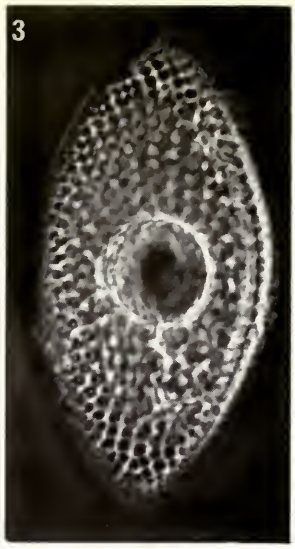
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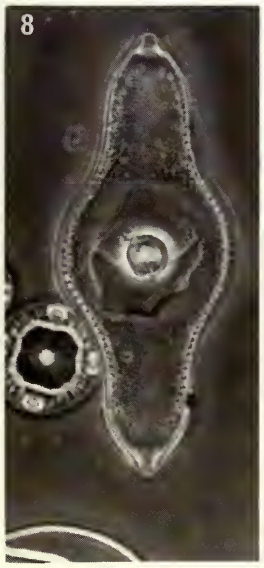
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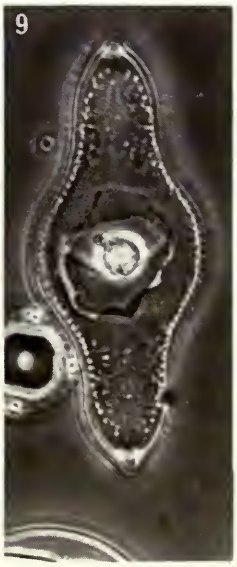
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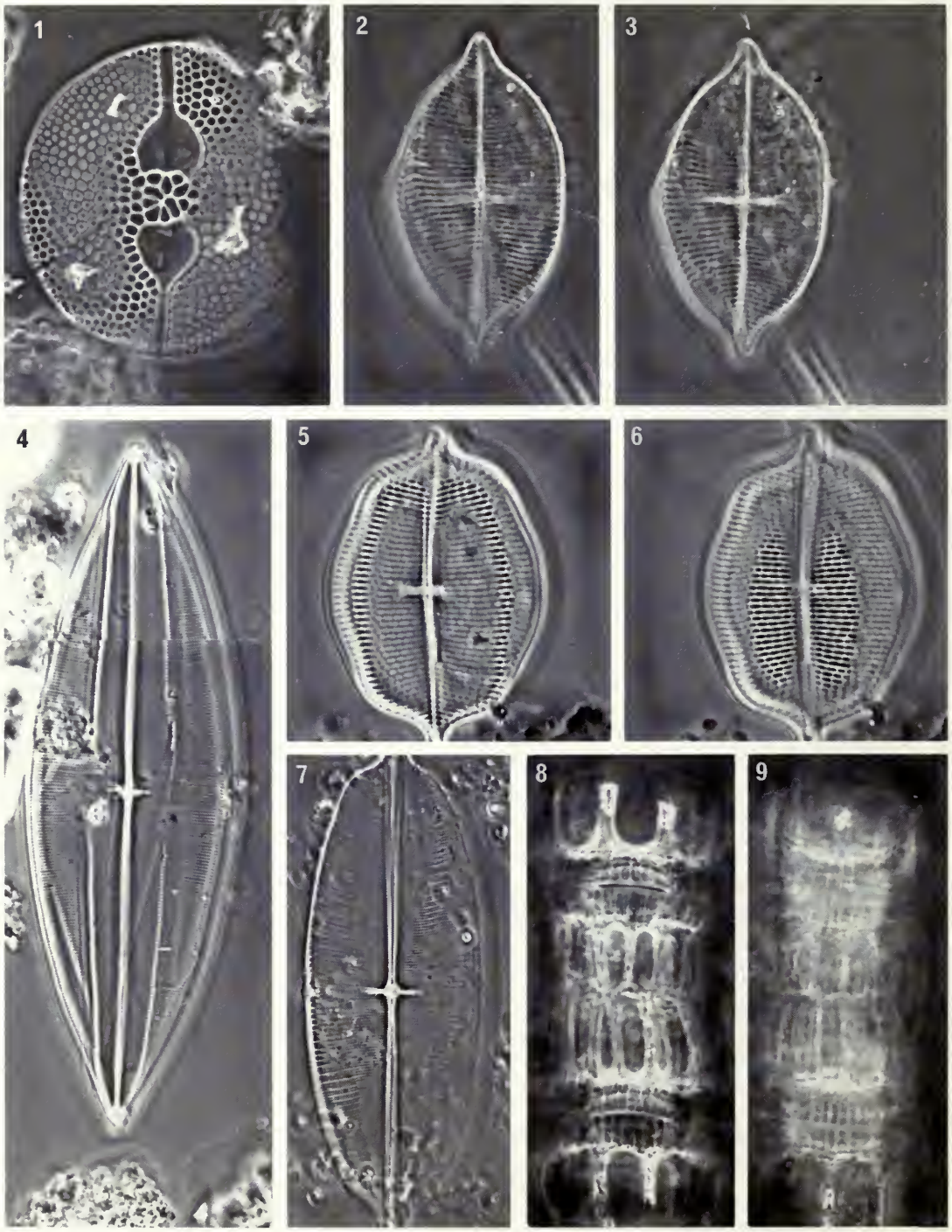
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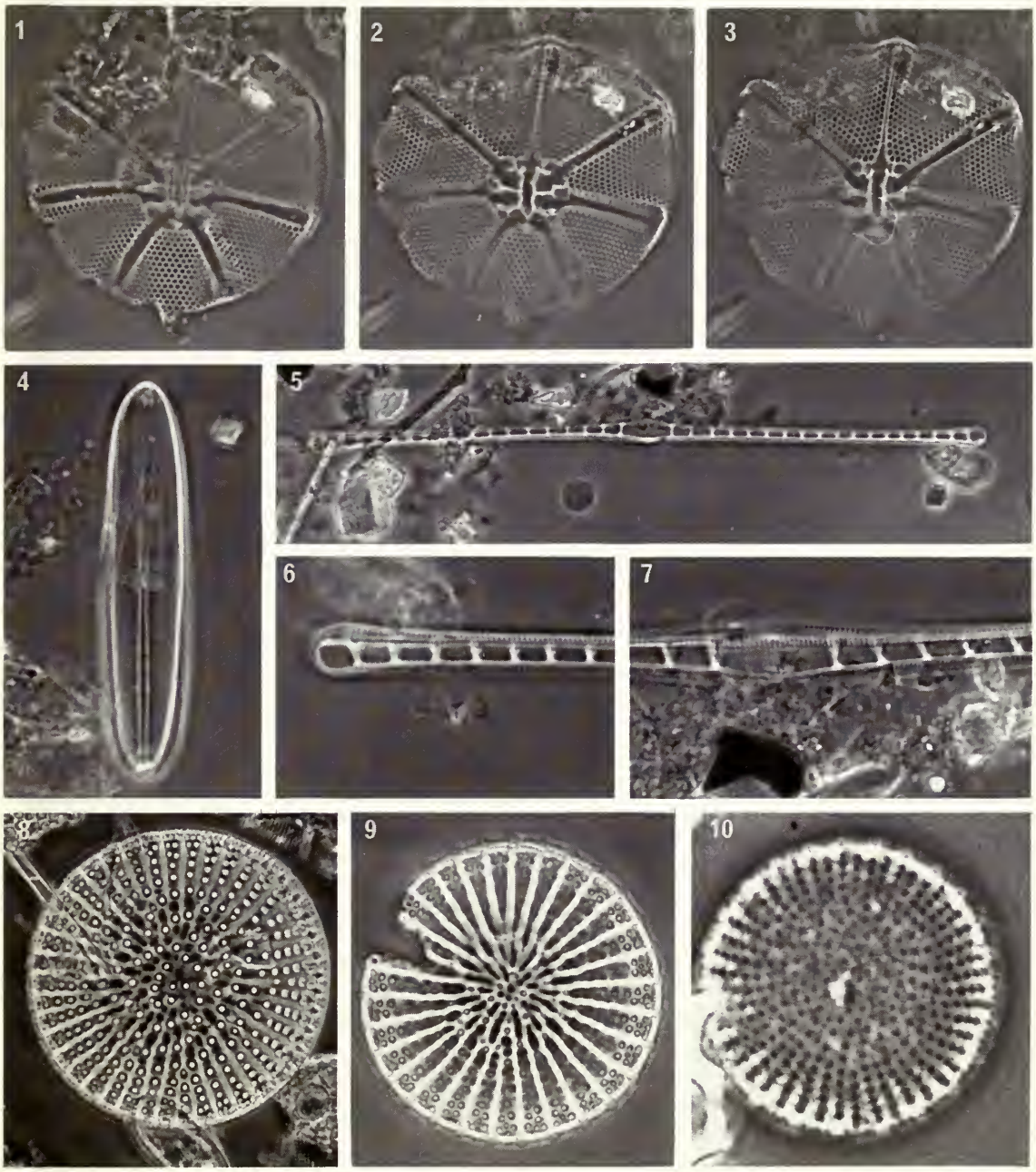
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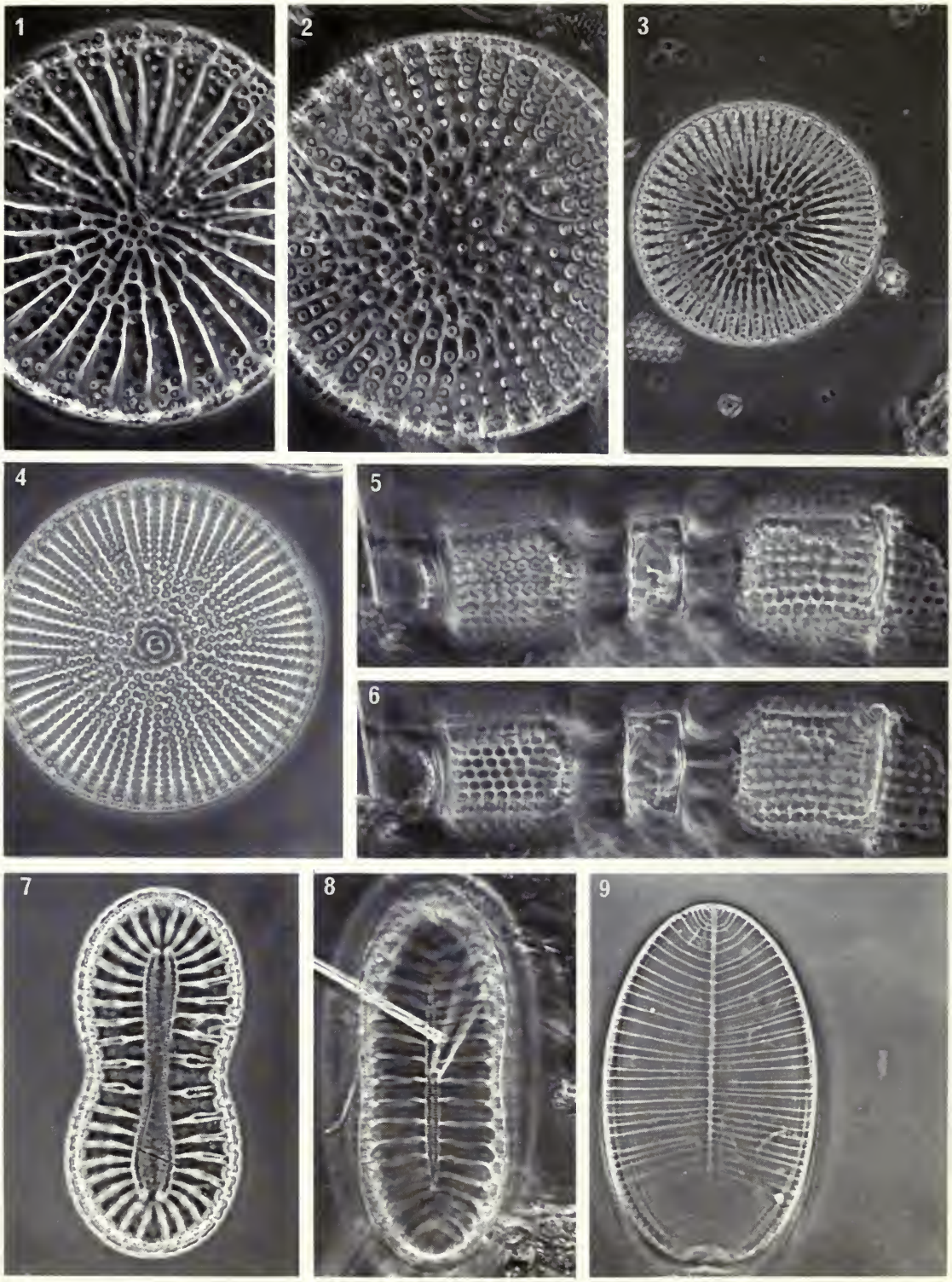
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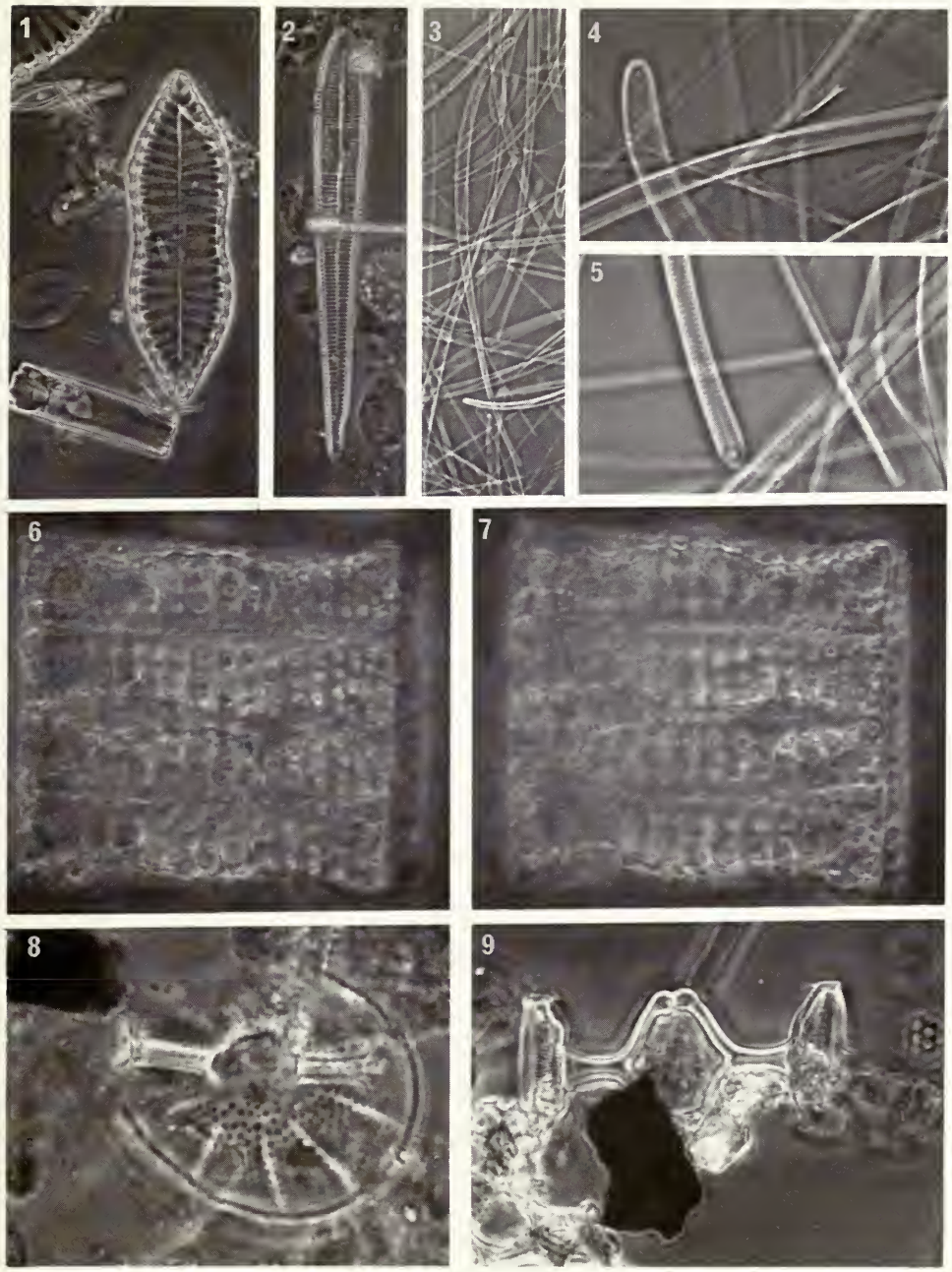
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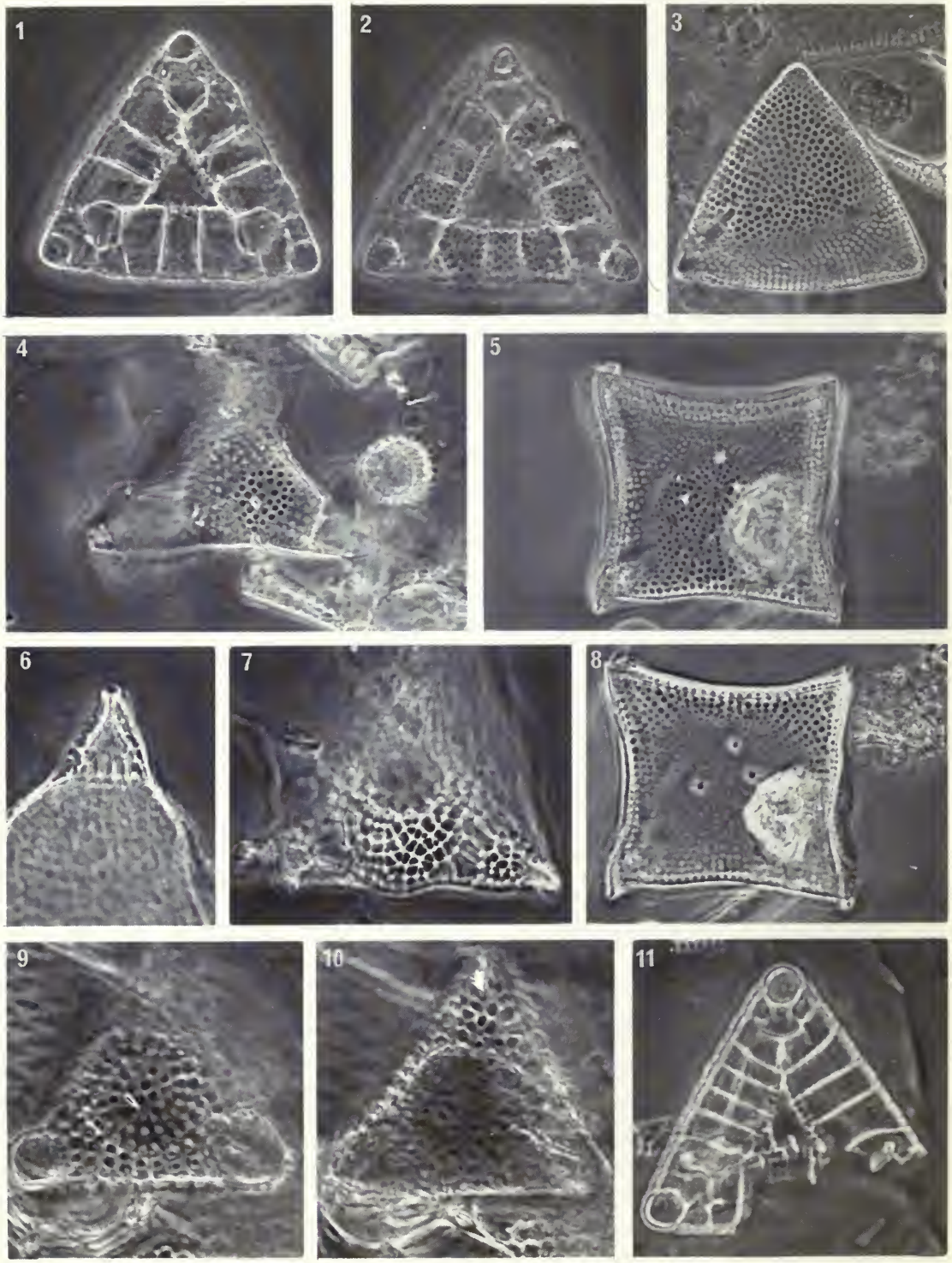
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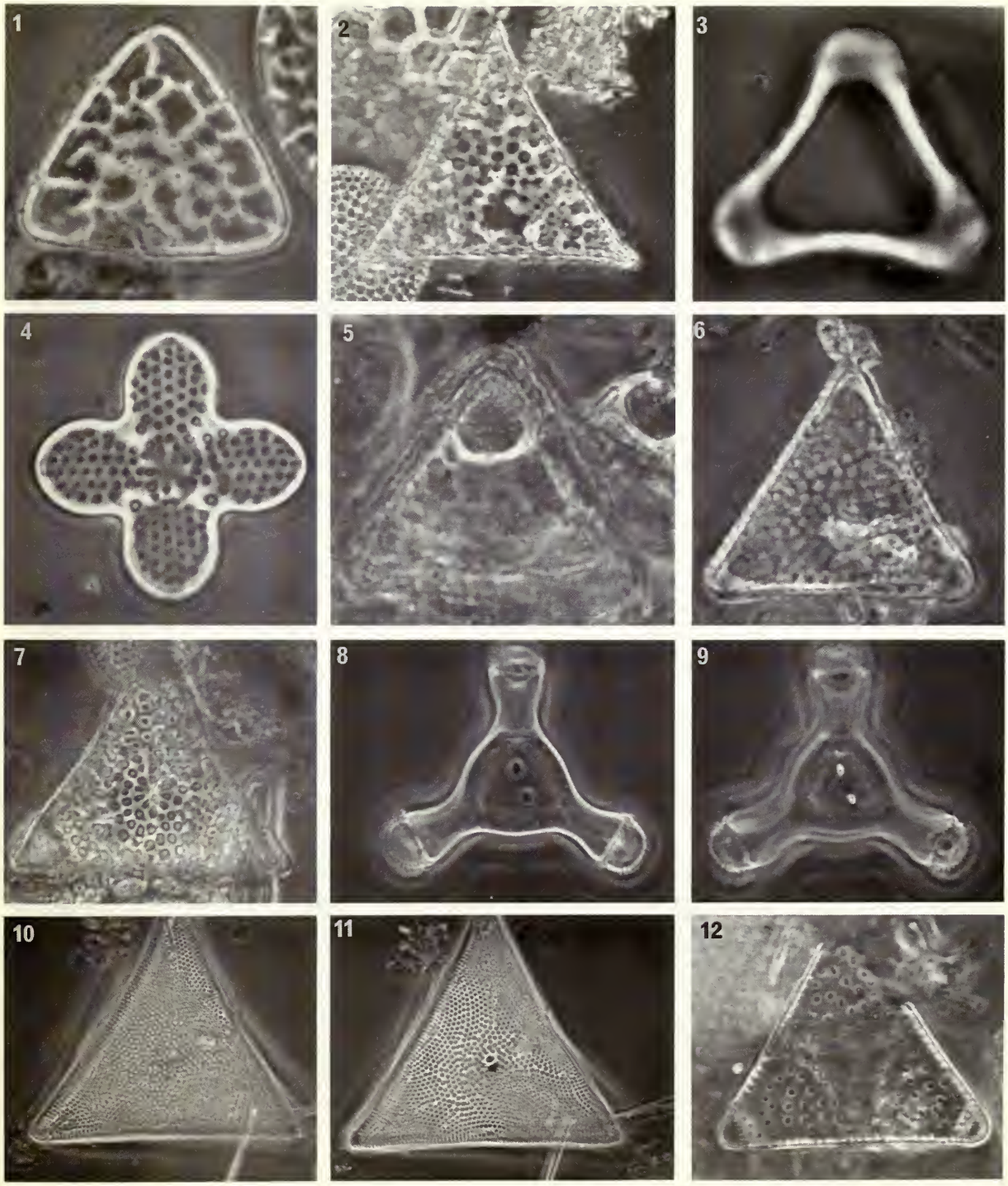
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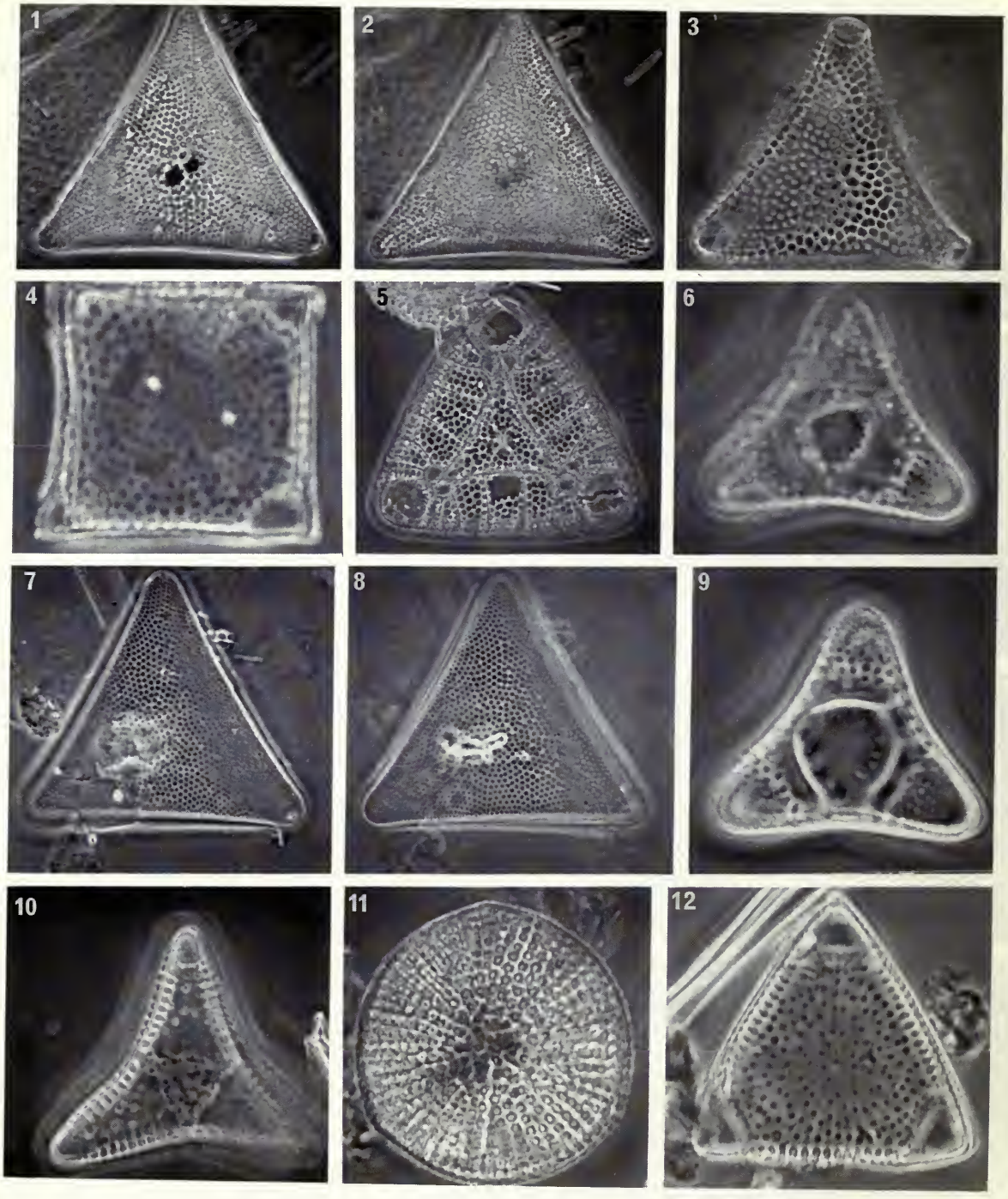

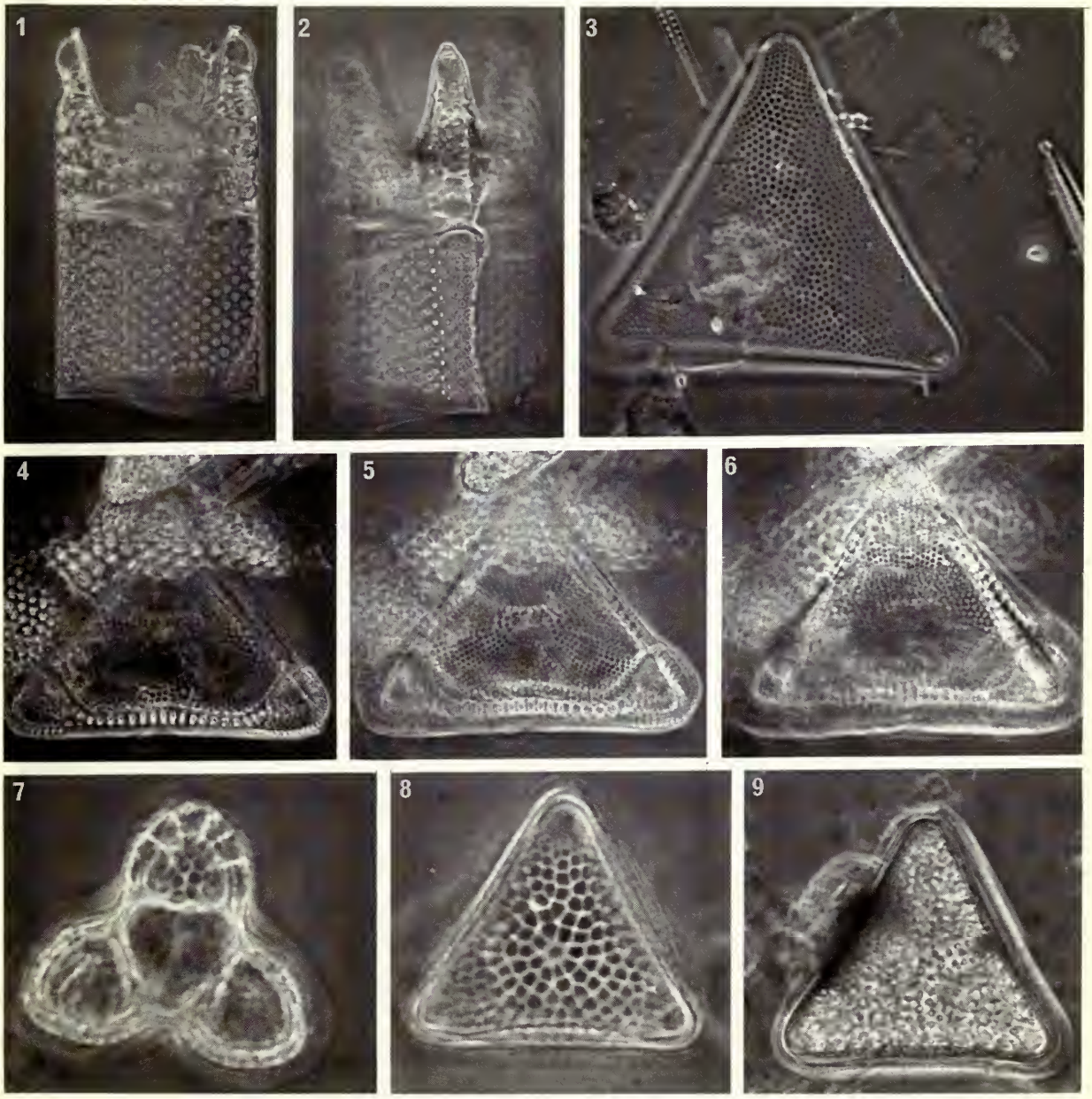
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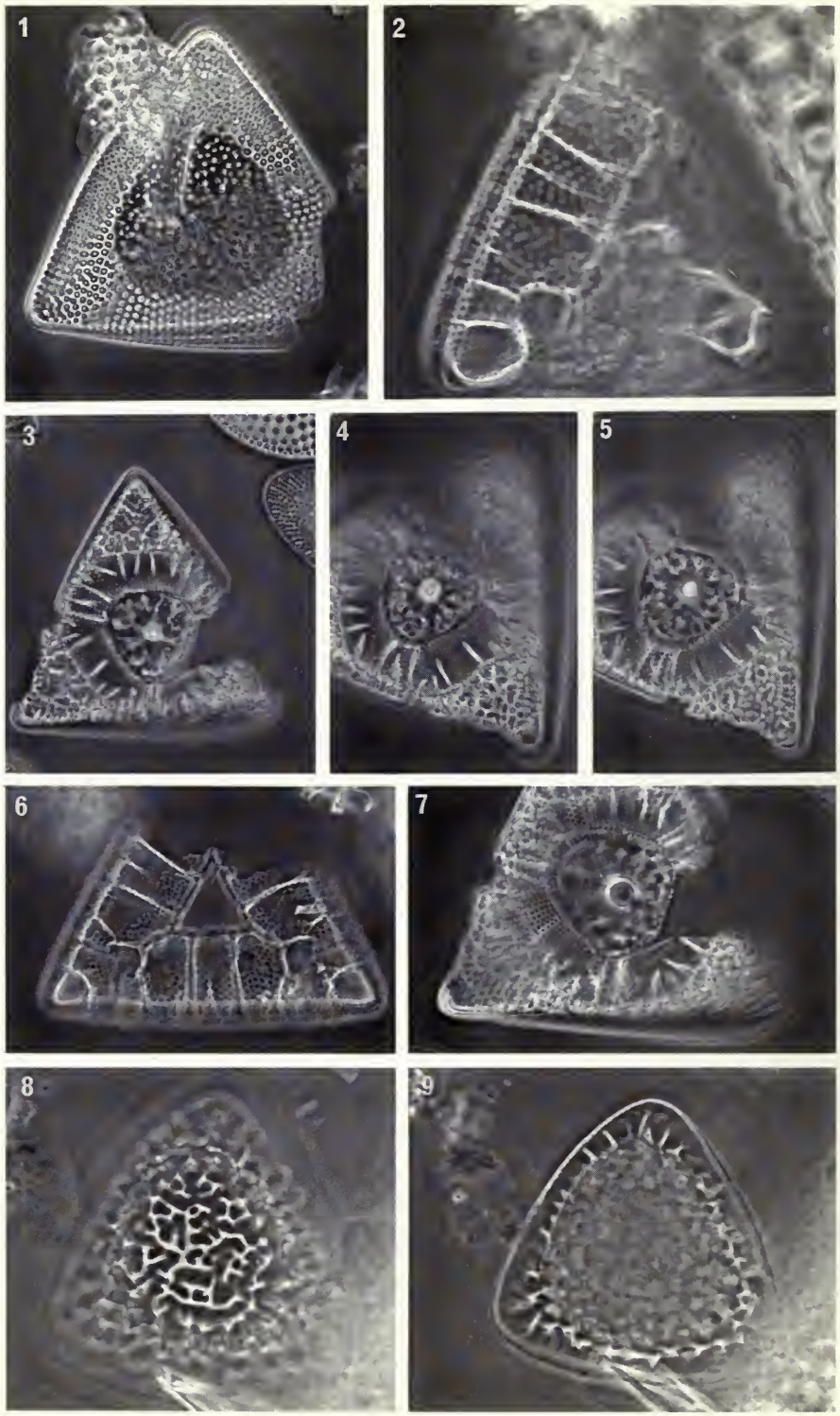
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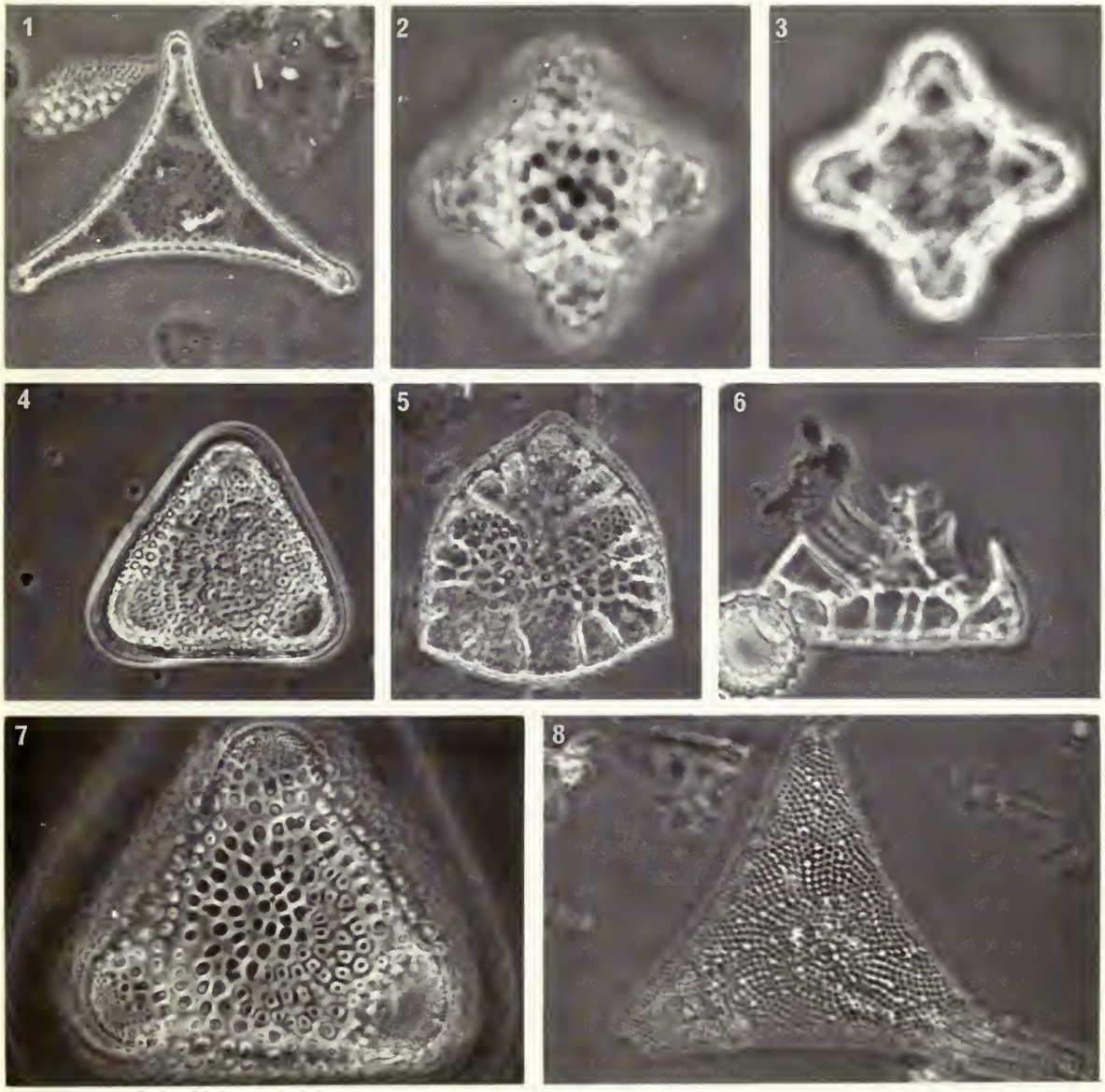
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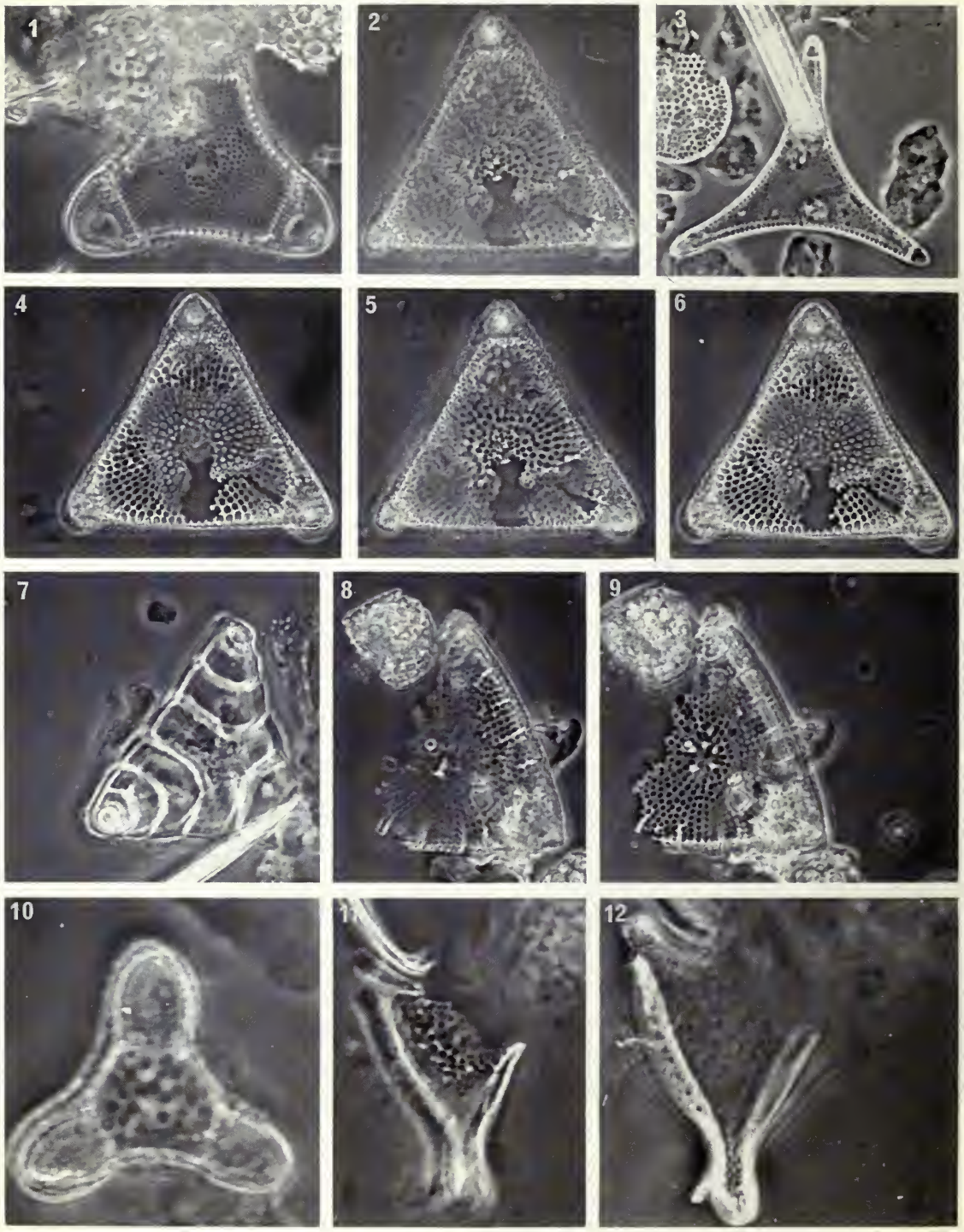
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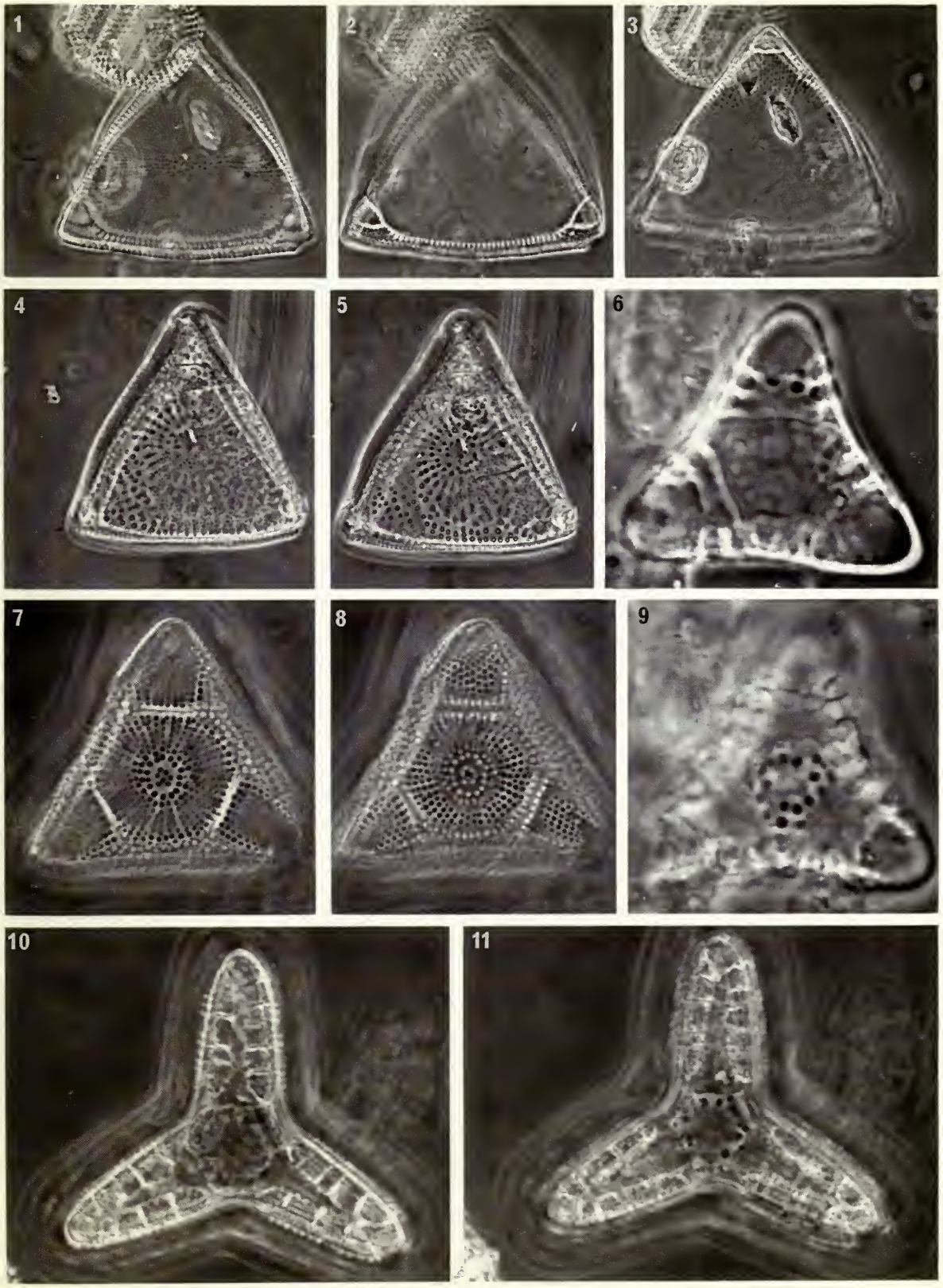
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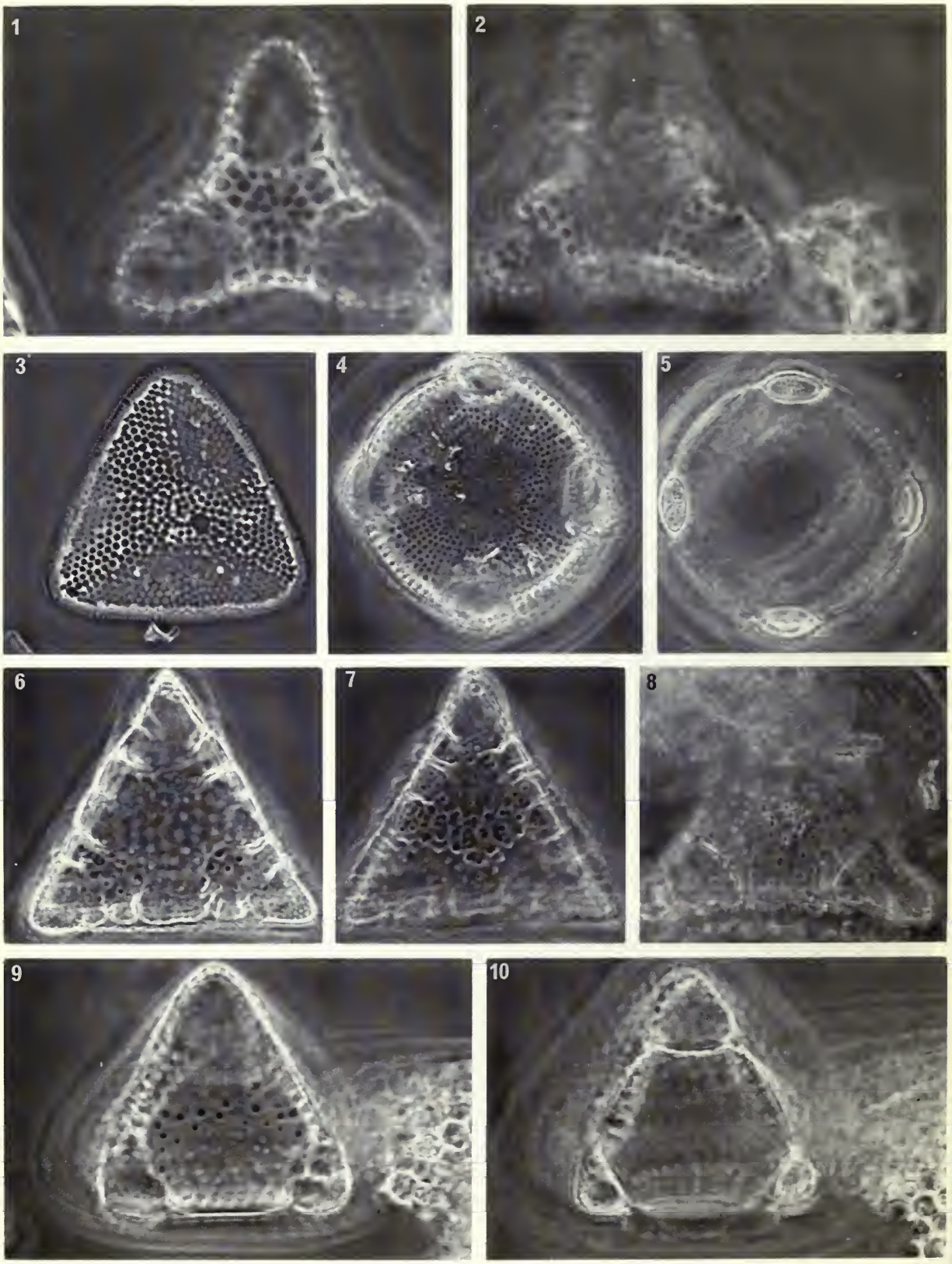
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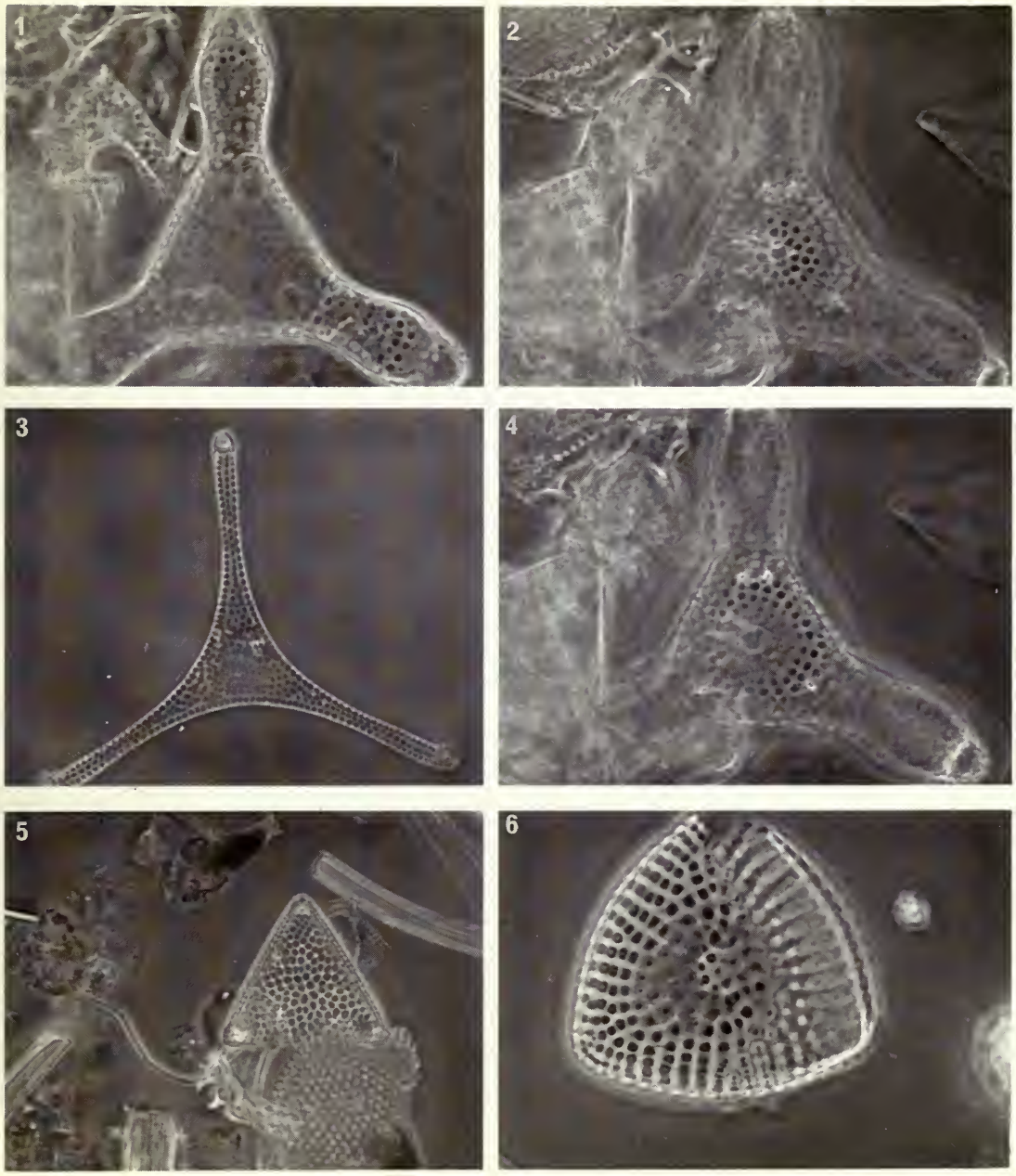
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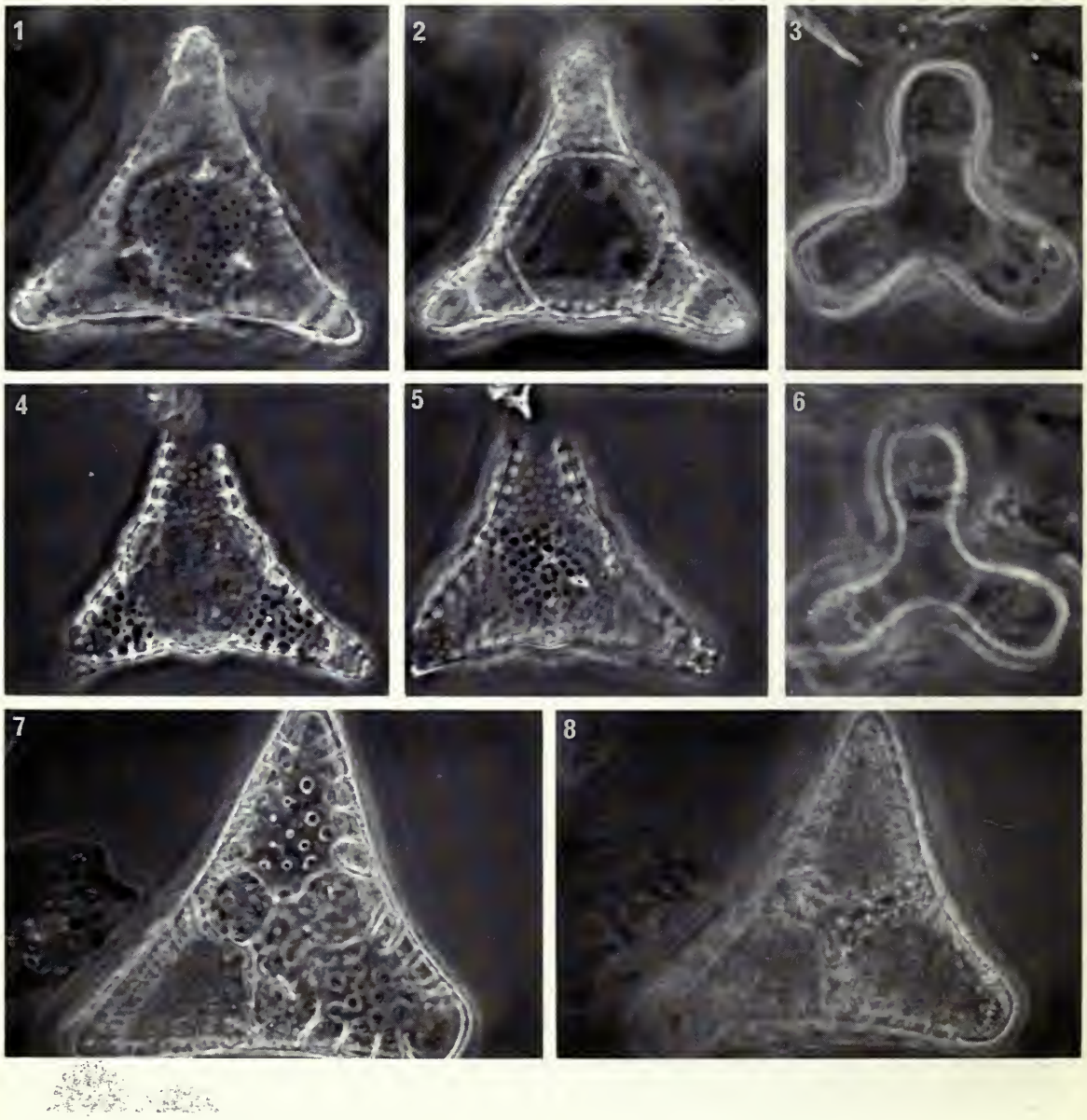
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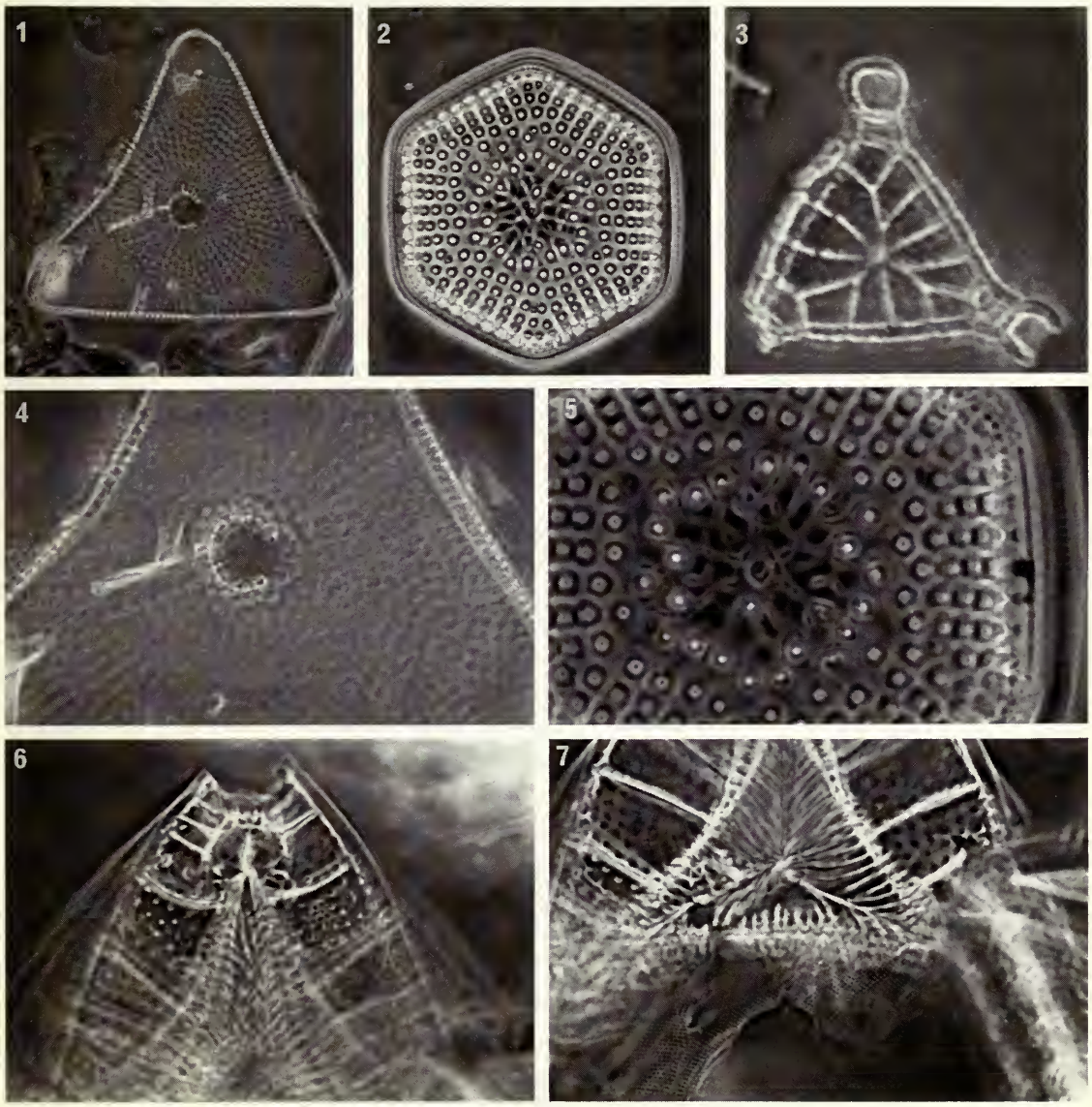
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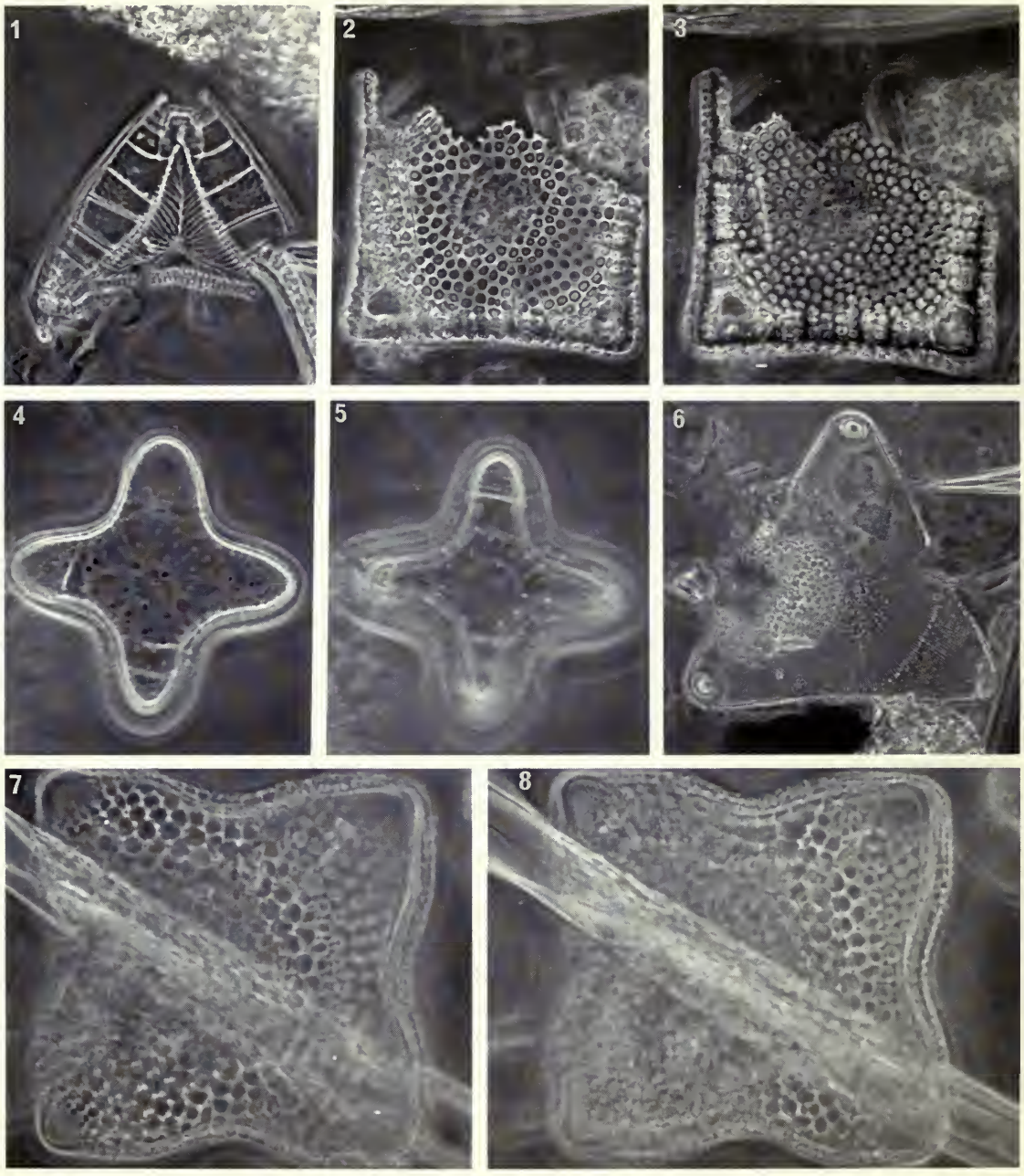
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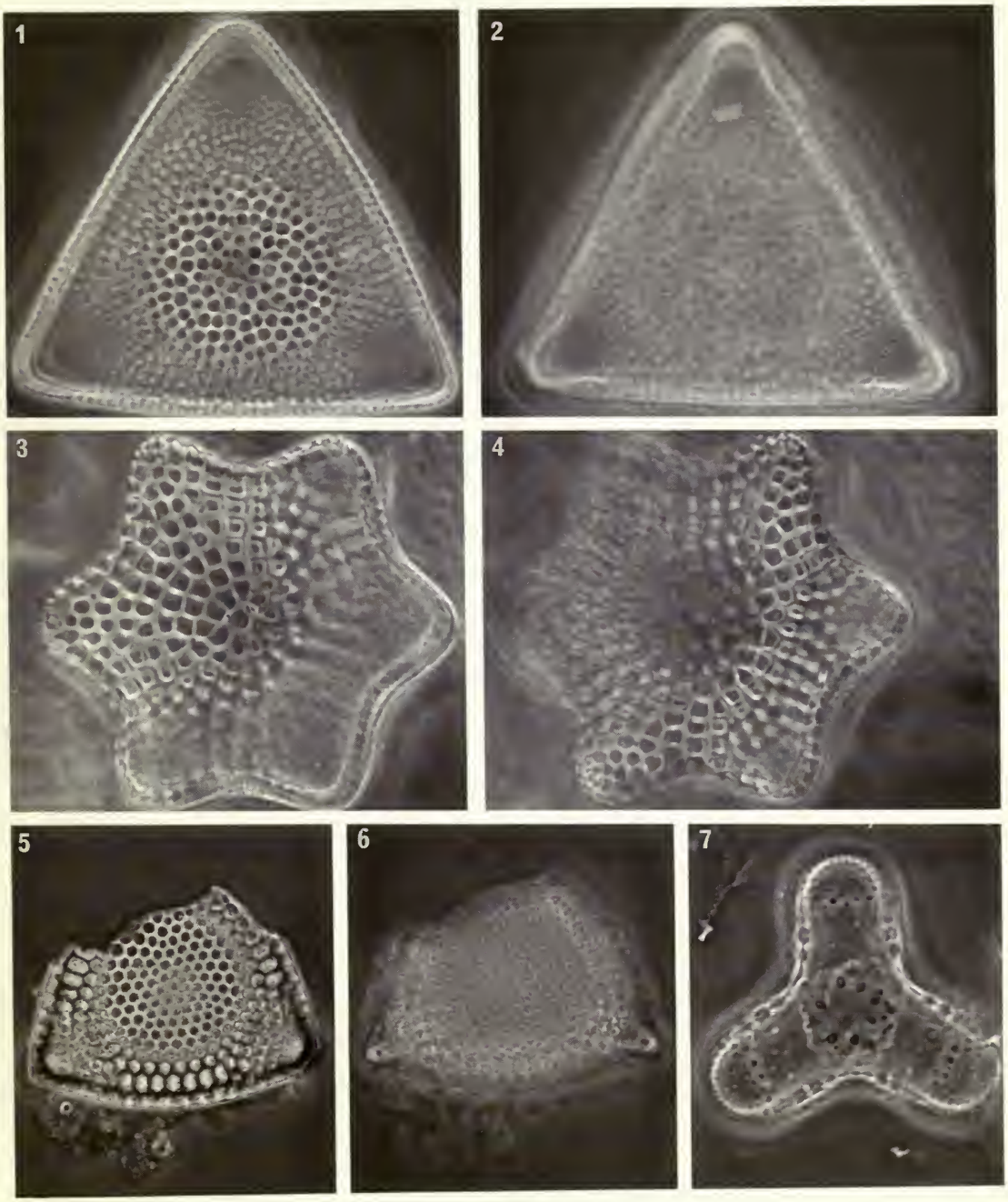
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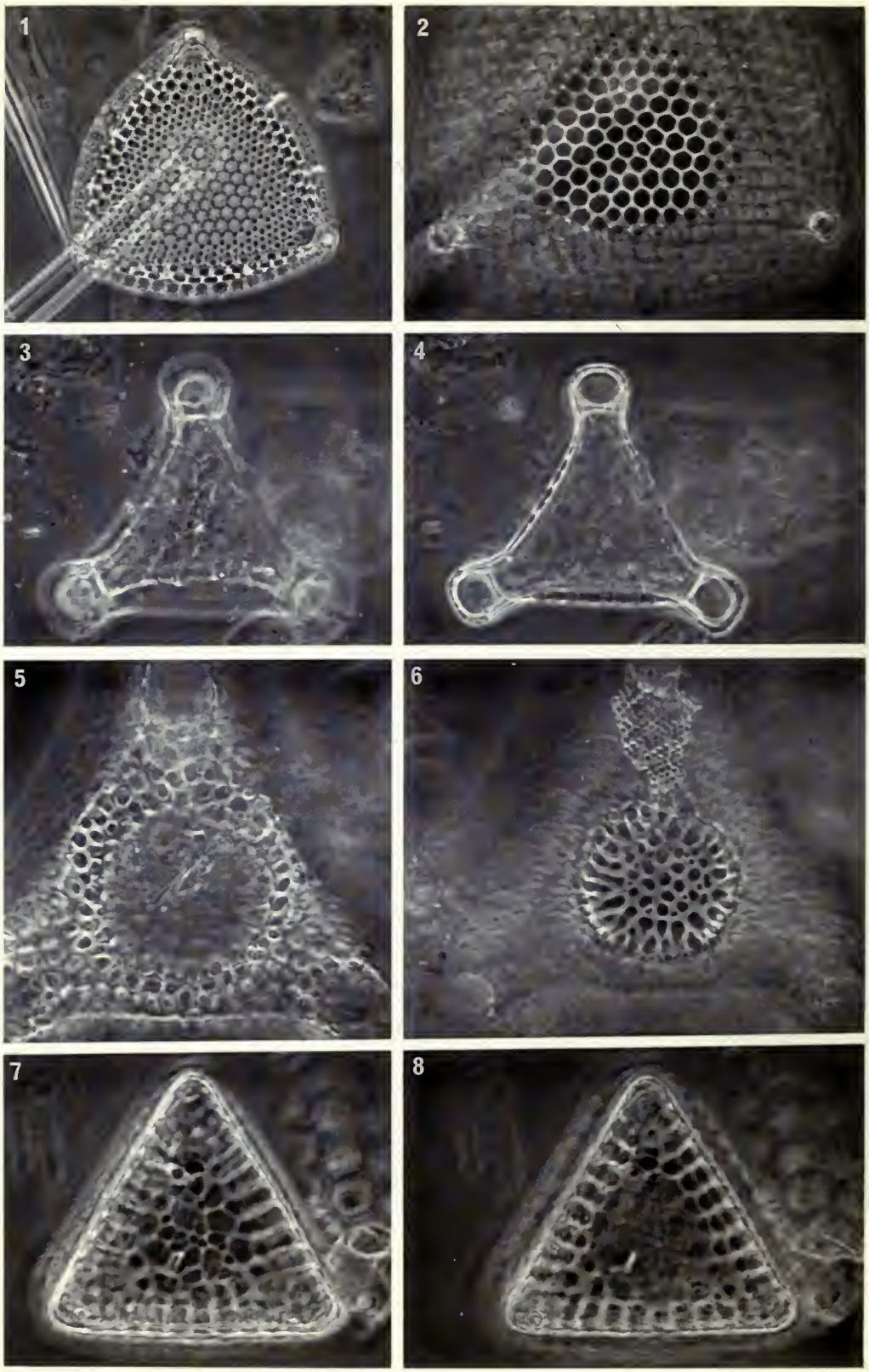
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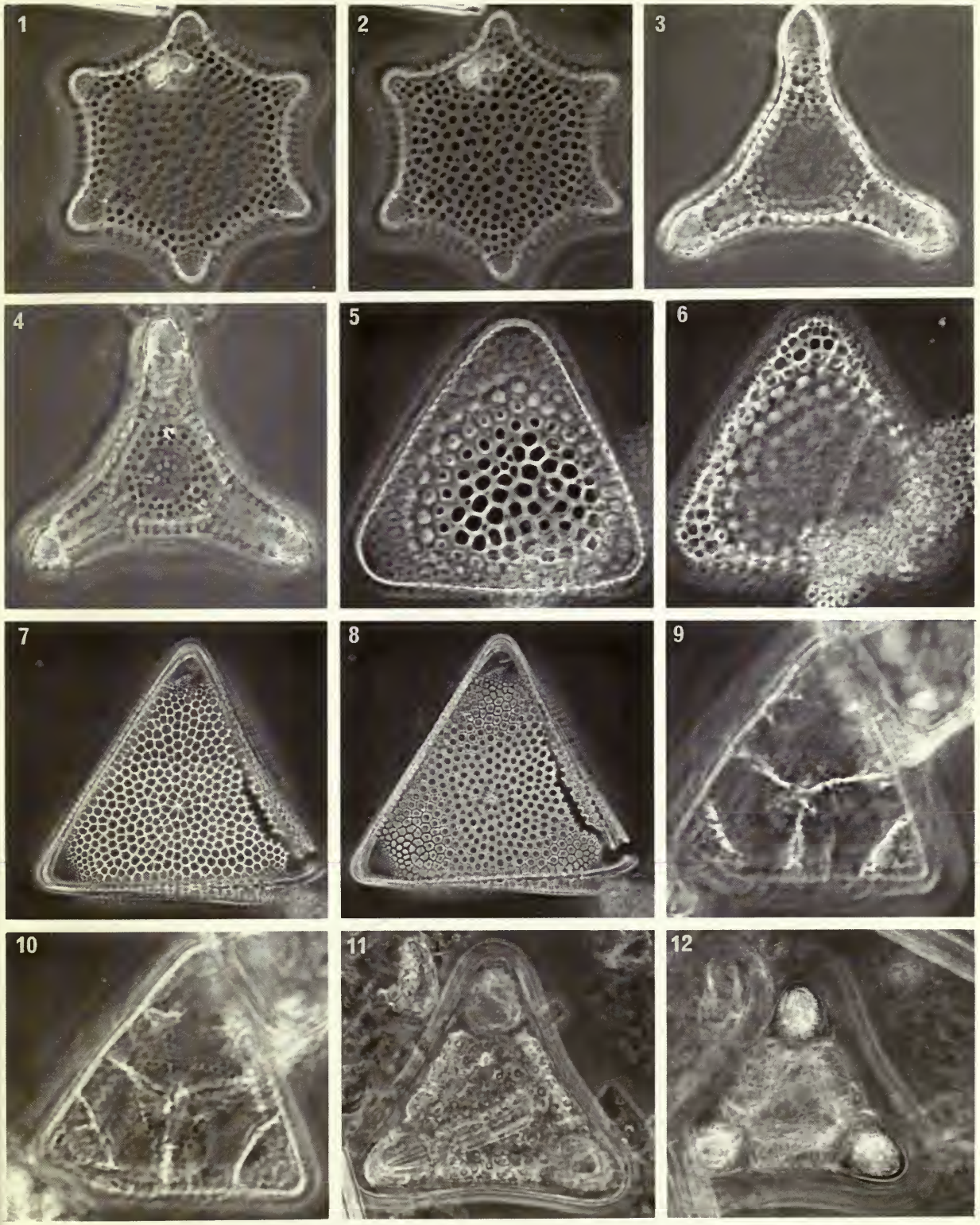
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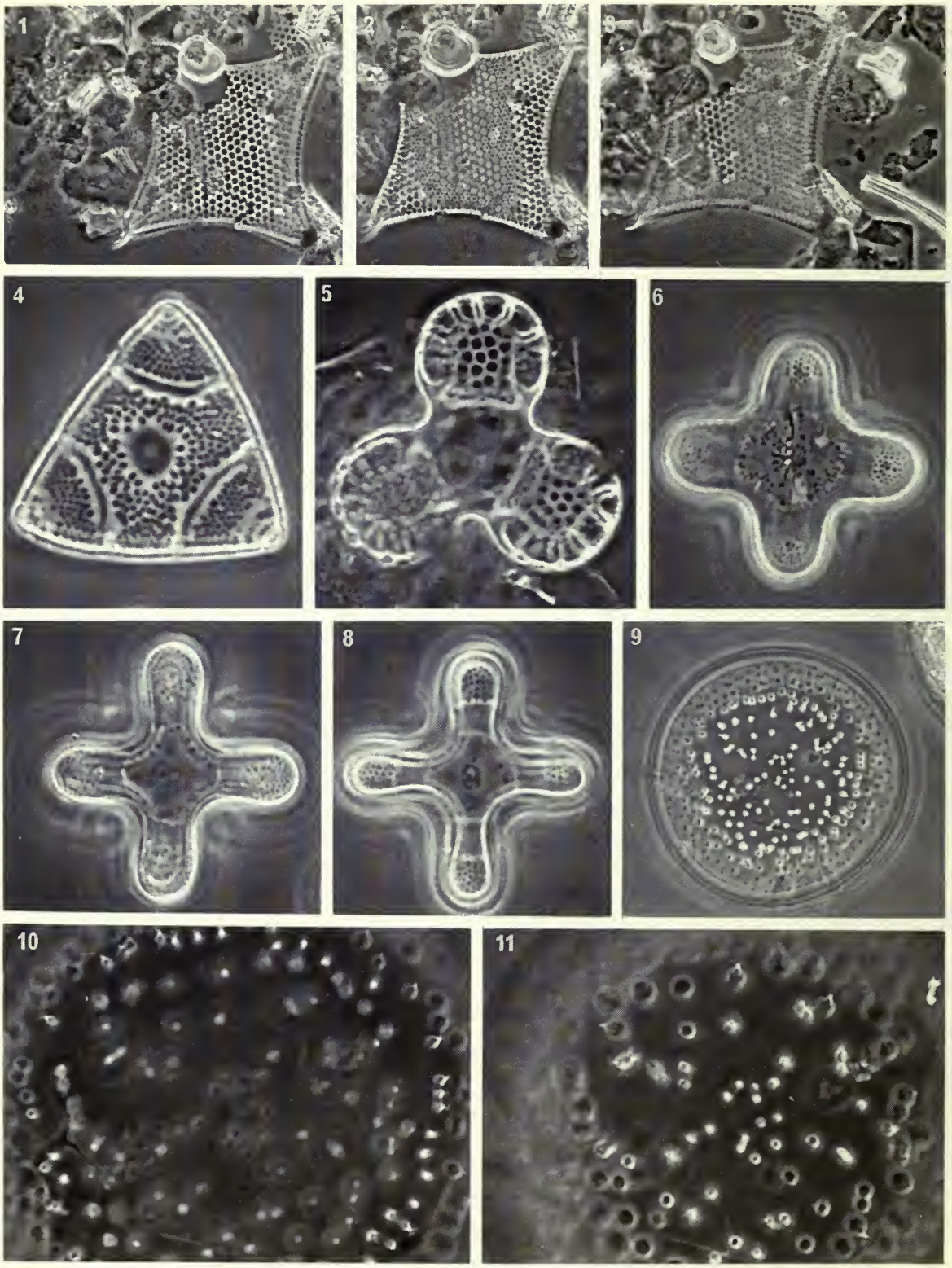
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British Museum (Natural History)

MACROLICHENS OF EAST AFRICA

T. D. V. Swinscow & H. Krog

Dr Swinscow was formerly Deputy Editor of the British Medical Journal.
Dr Krog is Professor of Taxonomic Botany at the University of Oslo.

This book is based mainly on collections made in the field by the authors. It covers 77 genera and 629 species. It is the first substantial study of a tropical lichen flora to be undertaken by modern research methods. Thin-layer chromatography has been used throughout, and the great majority of species have been studied by microscopic examination of microtome sections. The nomenclature has been thoroughly revised, and in all cases the basionym is given. The book will be indispensable to students of the lichens of the African continent and valuable to readers interested in lichens throughout the tropics.

Summer 1988, viii + 384pp, 185 figs., 16pp colour illustrations.
Hardback. 0 565 01039 5. £40.00

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